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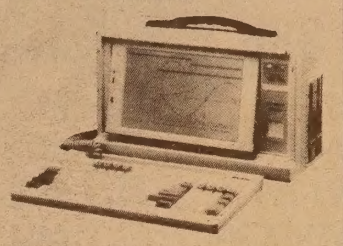

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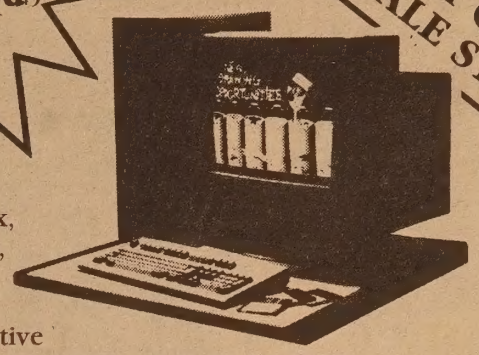

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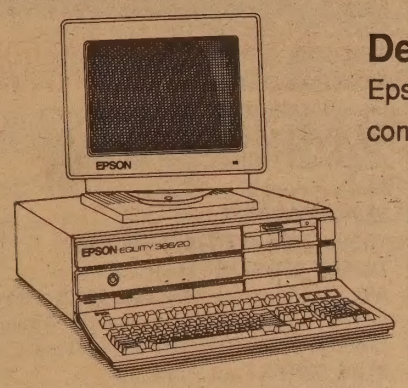

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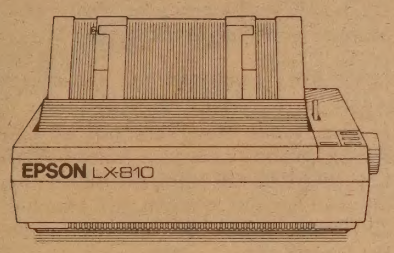

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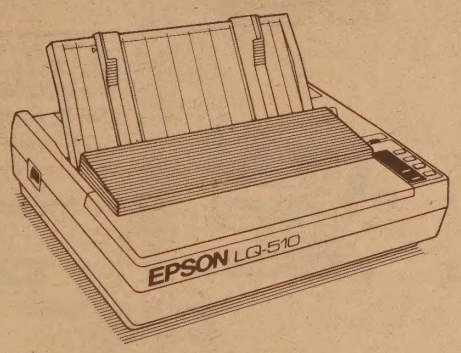

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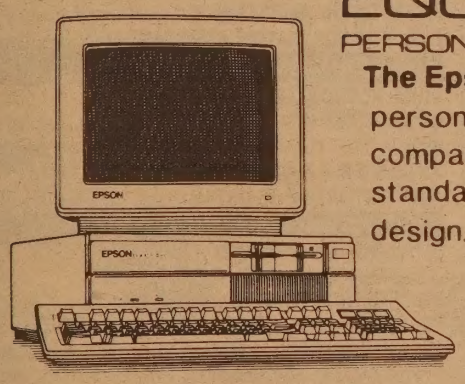

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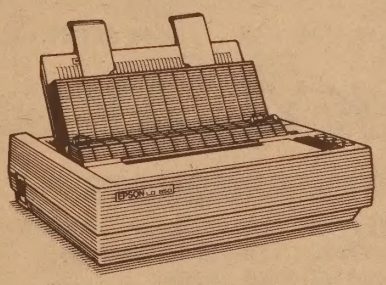

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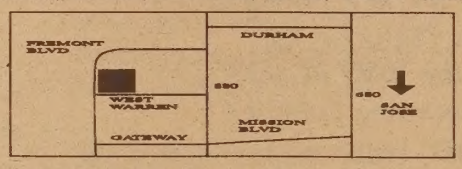

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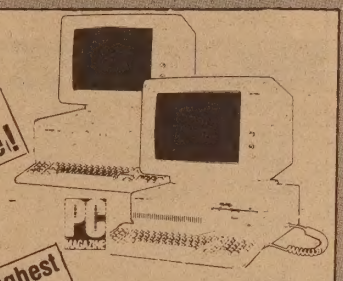

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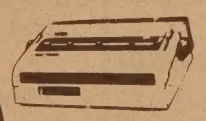

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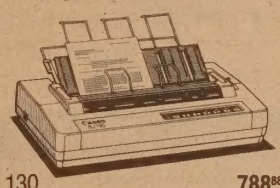
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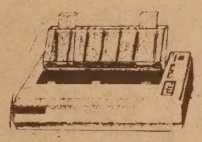
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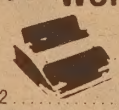
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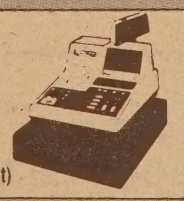

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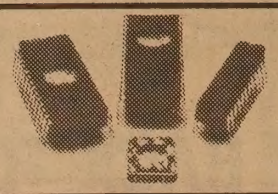

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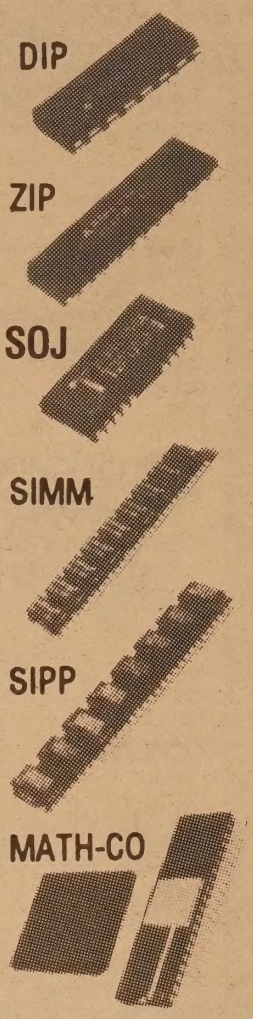

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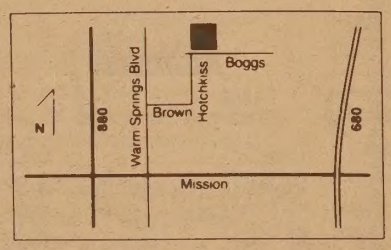

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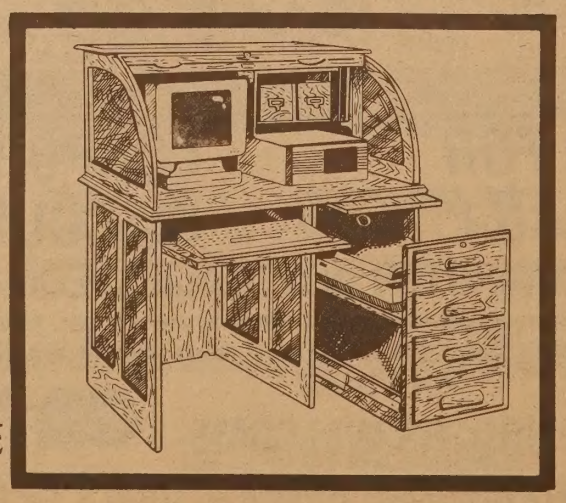

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September 6 DOS Essentials: Using The PC Operating System Class. Oakland. DataNet. Call: (415)465-9084.

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September 7 HyperCard I Class. Fort Mason Center, San Francisco. Computer Alliance. Call: (415)771-1671.

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September 7–8 Time Line 3.0 Workshop. San Francisco. Symantec. Call: (415)898-1919.

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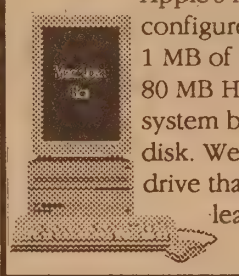
Macintosh II cx



Apple's hottest new product. Comes configured with a 40 MB Hard Disk and 1 MB of RAM, or 4 MB of RAM and an 80 MB Hard Disk, or customize your system based on the IIcx without a Hard disk. We can install any size internal drive that we carry for you Available for lease or purchase. Please call for the best price.

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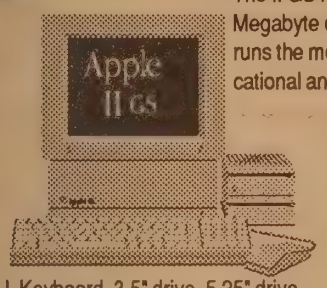

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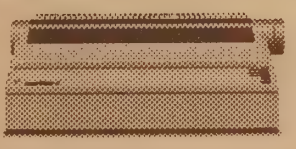

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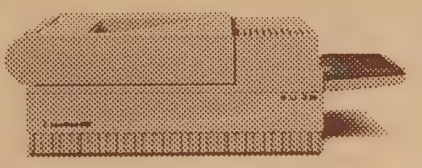
Apple gives you 3 ways to make great images. The LaserWriter II series is upgradable & reliable. The NT and the NTX are PostScript™ printers.



LaserWriter II SC $1999
LaserWriter II NT $3595
LaserWriter II NTX $4999

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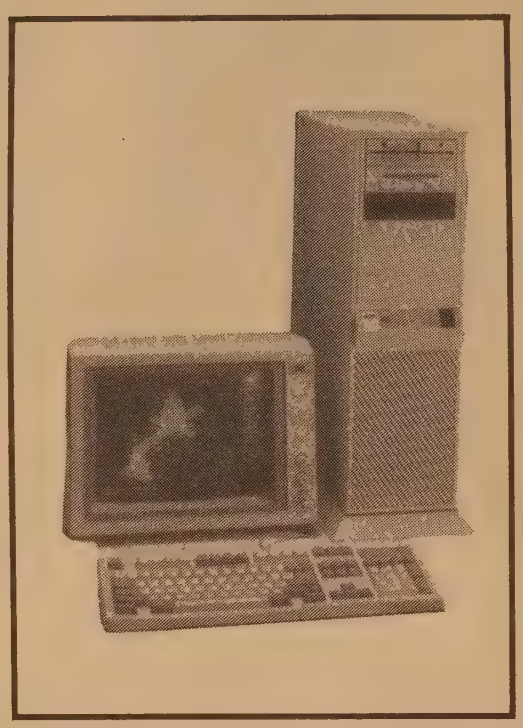

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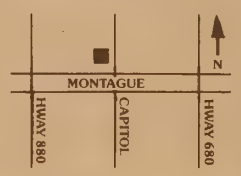

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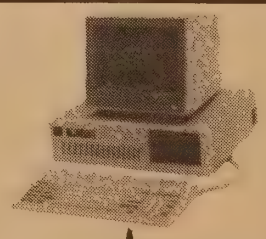

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CALENDAR OF EVENTS *continued*

September 10 Computer Show & Sale. Hayward. East-West Computer Shows. Call: (415)388-8893.

September 11–13 1989 Technical Computing And Applications Conference. Santa Clara. Dataquest. Call: (408)437-8245.

September 11–14 '89 INTEREX HP Users' Conference. San Francisco. International Association of Hewlett-Packard Computer User. Call: (408)738-4848.

September 11 Graphic Tools For The Macintosh Class. Fort Mason Center, San Francisco. Computer Alliance. Call: (415)771-1671.

September 11–13 Novell System Manager Course. Santa Ana. New Horizons. Call: (714)556-1220.

September 12 Automating Your Business Accounting System: Find Out Where To Begin Seminar. San Francisco. J.C. Lukrich & Co. Call: (415)864-6770

September 12–15 Effective Skills For Technical Managers Course. San Francisco. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

September 12–15 Microprocessor Software, Hardware, & Interfacing: Hands-on Introduction. San Francisco. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

September 12 Microsoft Word, Part I Class. Fort Mason Center, San Francisco. Computer Alliance. Call: (415)771-1671.

September 12–15 OS/2: A Comprehensive Hands-on Introduction Course. San Francisco. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

September 12 SEF Meeting: Macintosh SIG. Foothill College. Software Entrepreneurs' Forum. Call: Tony Meadow. (415)644-9400.

September 12 Using Expert System Shells Seminar. San Francisco. Ask Dr. DOS. Call: (415)255-7862.

September 13 Automated Accounting Workshop. San Francisco. J.C. Lukrich & Co. Call: Beth Markus, (415)864-6770.

September 13 Basic Macintosh Class. Fort Mason Center, San Francisco. Computer Alliance. Call: (415)771-1671.

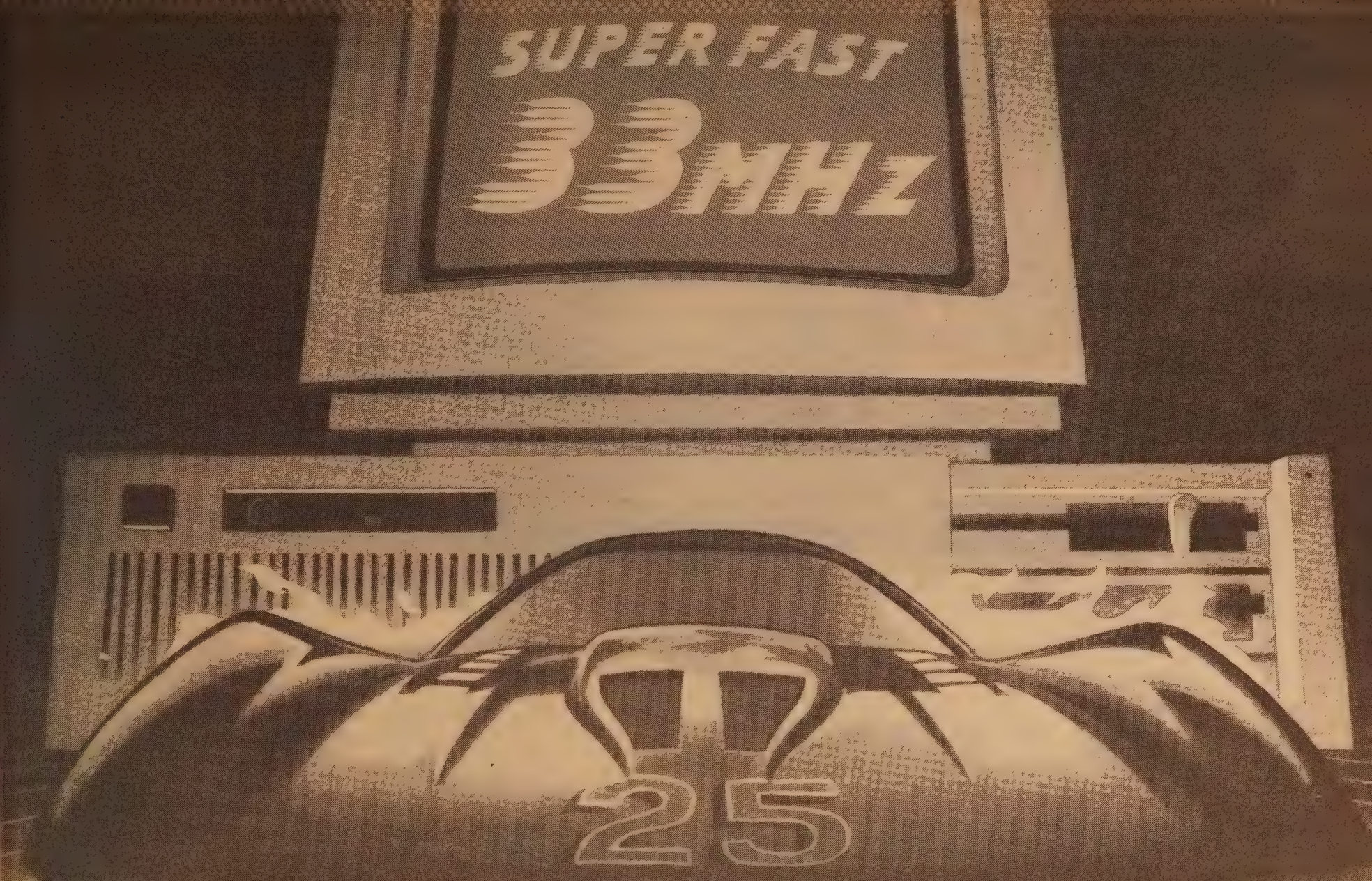
September 13 How And What To Export To Hong Kong Seminar. San Francisco. US Department of Commerce. Call: Jill Melancon, (415)392-4511.

September 13–15 Micro/Mini & Micro/Mainframe Connectivity: Practical Linking Tools & Techniques Course. San Francisco. Integrated Computer Systems. Call: 1-800-421-8166.

September PageMaker Part I Class. Fort Mason Center, San Francisco. Computer Alliance. Call: (415)771-1671.

September 14 Producing Your Newsletter On The

continued



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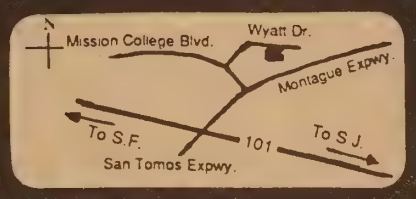

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September 14 SEF Meeting: IBM Technical SIG. Palo Alto. Software Entrepreneurs' Forum. Call: Mike Schmit, (408)244-6826.

September 15 Fundamentals Of WordPerfect Seminar. San Francisco. MicroApplications. Call: (415)863-4490.

September 15 Intermediate WordPerfect Seminar. San Francisco. Ask Dr. DOS. Call: (415)255-7862.

September 15 LAN Essentials: Installation & Configuration Course. Oakland. DataNet. Call: (415)465-9084.

September 16 Computer Show And Sale. Vallejo. East-West Computer Show. Call: (415)388-8893.

September 16 LAN Trouble Shooting & Diagnostics Class. Oakland. DataNet. Call: (415)465-9084.

September 16 Shop Till Ya Drop Computer Swap. Oakland. Richard James. Call: 1-800-433-7469.

September 17 San Francisco Computer Show, Sale, And Swap. Fort Mason Center. Compu-Shows. Call: (415)931-0423.

September 18 Basic Macintosh Class. Fort Mason Center, San Francisco. Computer Alliance. Call: (415)771-1671.

September 18–21 Intensive Macintosh Programming Classes. Berkeley. Bear River Institute. Call: (415)644-0555.

September 18–19 Time Line 3.0 Workshop. San Francisco. Symantec. Call: (415)898-1919.

September 19–21 8th Annual Northern California Plant Engineering & Maintenance Show And Conference. Santa Clara. Professional Trade Shows, Inc. Call: (408)946-5600.

September 19–22 A Meeting Of The Minds III Developer Conference. Anaheim. Ashton Tate. Call: Brad Stevens, (213)538-7348.

September 19 HyperCard I Class. Fort Mason Center, San Francisco. Computer Alliance. Call: (415)771-1671.

September 19 MacWEEK Interface Design Conference. San Francisco. MacWEEK. Call: Cindy Koral, (415)243-3515.

September 19 PageMaker Part I Class. Fort Mason Center, San Francisco. Computer Alliance. Call: (415)771-1671.

September 19–22 PC Networking: Hands-on Workshop. San Francisco. Integrated Computer Systems. Call: 1-800-421-8166.

September 19–21 Plant Engineering & Maintenance Show And Conference. Santa Clara. Professional Trade Shows. Call: Rick Musson, (415)581-7003.

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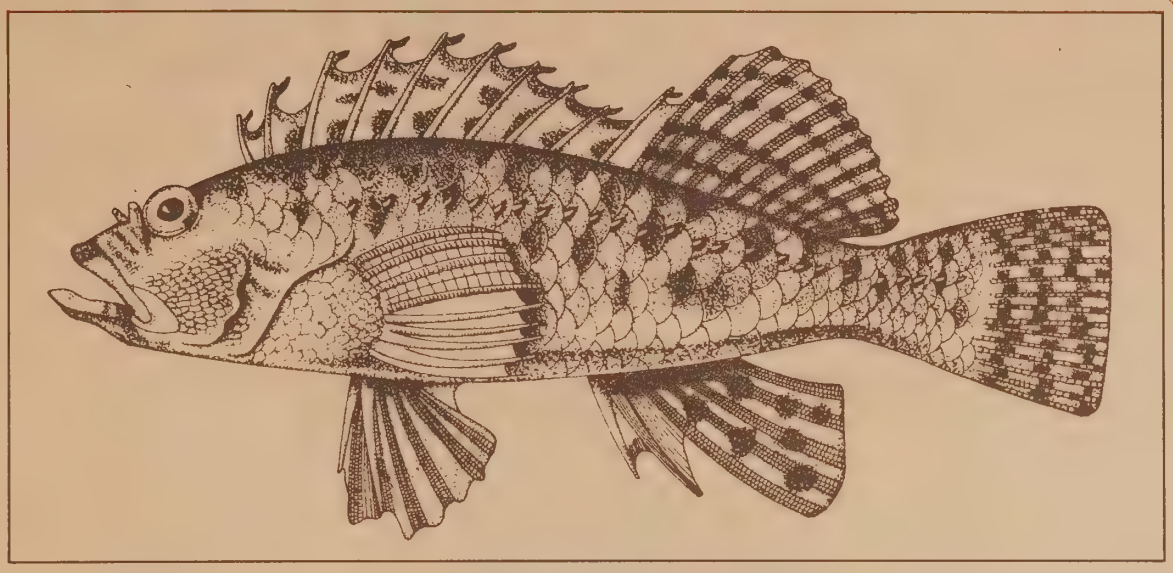

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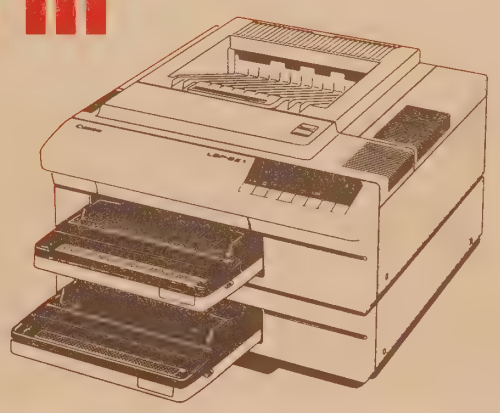

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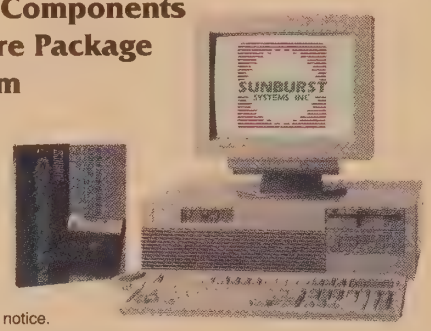

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CALENDAR OF EVENTS *continued*

September 19 SEF Meeting: OOP SIG. Mountain View. Software Entrepreneurs' Forum. Call: Dean Ritz, (415)691-6727.

September 19–22 Software Quality Assurance & Testing Course. San Francisco. Integrated Computer Systems. Call: 1-800-421-8166.

September 20 DOS Essentials: Using The PC Operating System Class. Oakland. DataNet. Call: (415)465-9084.

September 20 Excel: Business Power For The Mac Class. Fort Mason Center, San Francisco. Computer Alliance. Call: (415)771-1671.

September 20 MDTA Meeting: Expert Systems/ Artificial Intelligence. Walnut Creek. Mount Diablo Technology Association. Call: (415)932-4828.

September 21 Intermediate Macintosh Class. Fort Mason Center, San Francisco. Computer Alliance. Call: (415)771-1671.

September 21 MS-DOS Survival Skills Seminar. San Francisco. MicroApplications. Call: (415)863-4490.

September 21 PageMaker Part II Class. Fort Mason Center, San Francisco. Computer Alliance. Call: (415)771-1671.

September 21 SEF Meeting: Selling Software In The Retail Marketplace. Palo Alto. Software Entrepreneurs' Forum. Call: Barbara Cass, (415)854-7219.

September 21–22 Special Topics In UNIX Programming Short Course. San Francisco. University of California, Berkeley. Call: (415)642-4111.

September 22–24 AppleFest '89. San Francisco. Cambridge Marketing. Call: 1-800-262-FEST.

September 22 Socially Responsible Computing: Computer Resources For The Nonprofit Community Seminar. San Francisco. AppleFest '89. Call: CompuMentor, (415)255-6040.

September 22 System Manager: Using The Novell Operating System Class. Oakland. DataNet. Call: (415)465-9084.

September 23 Computer Show And Sale. Oakland. East-West Computer Show. Call: (415)388-8893.

September 23 Graphic Tools For The Macintosh Class. Fort Mason Center, San Francisco. Computer Alliance. Call: (415)771-1671.

September 23 Shop Till Ya Drop Computer Swap. Pleasanton. Richard James. Call: 1-800-433-7469.

September 24 Computer Show And Sale. Santa Rosa. East-West Computer Show. Call: (415)388-8893.

September 25 CeBIT High-tech Export Workshop. Santa Clara. Hannover Fairs USA. Call: Donna Hyland, (609)987-0092.

September 25 Introduction To Adobe Illustrator Class. Fort Mason Center, San Francisco. Computer Alliance. Call: (415)771-1671.

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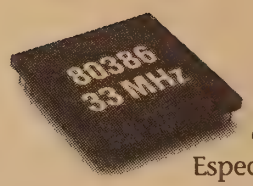

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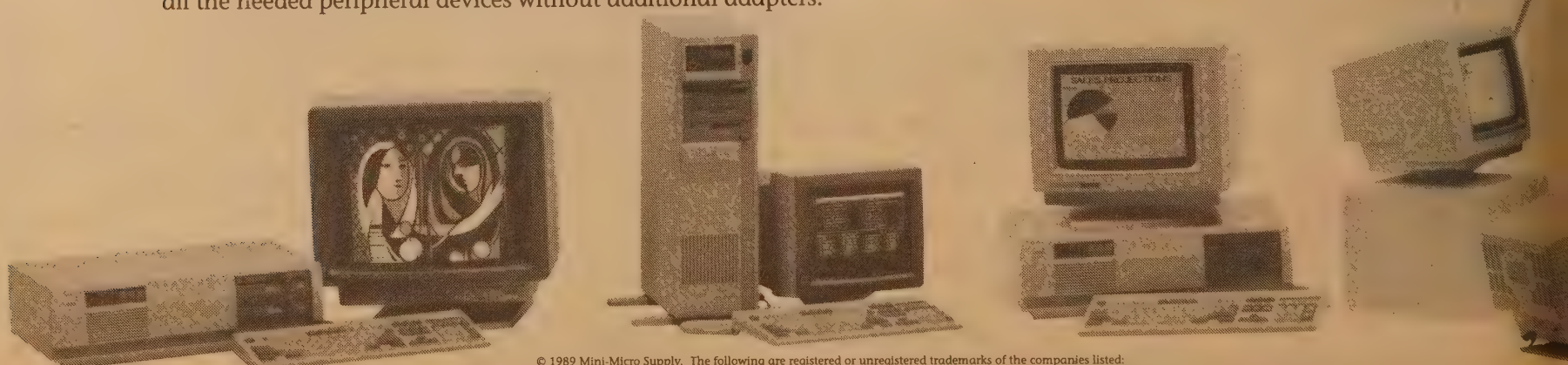

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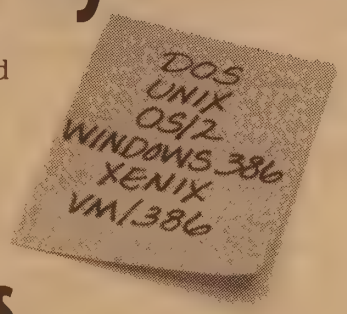

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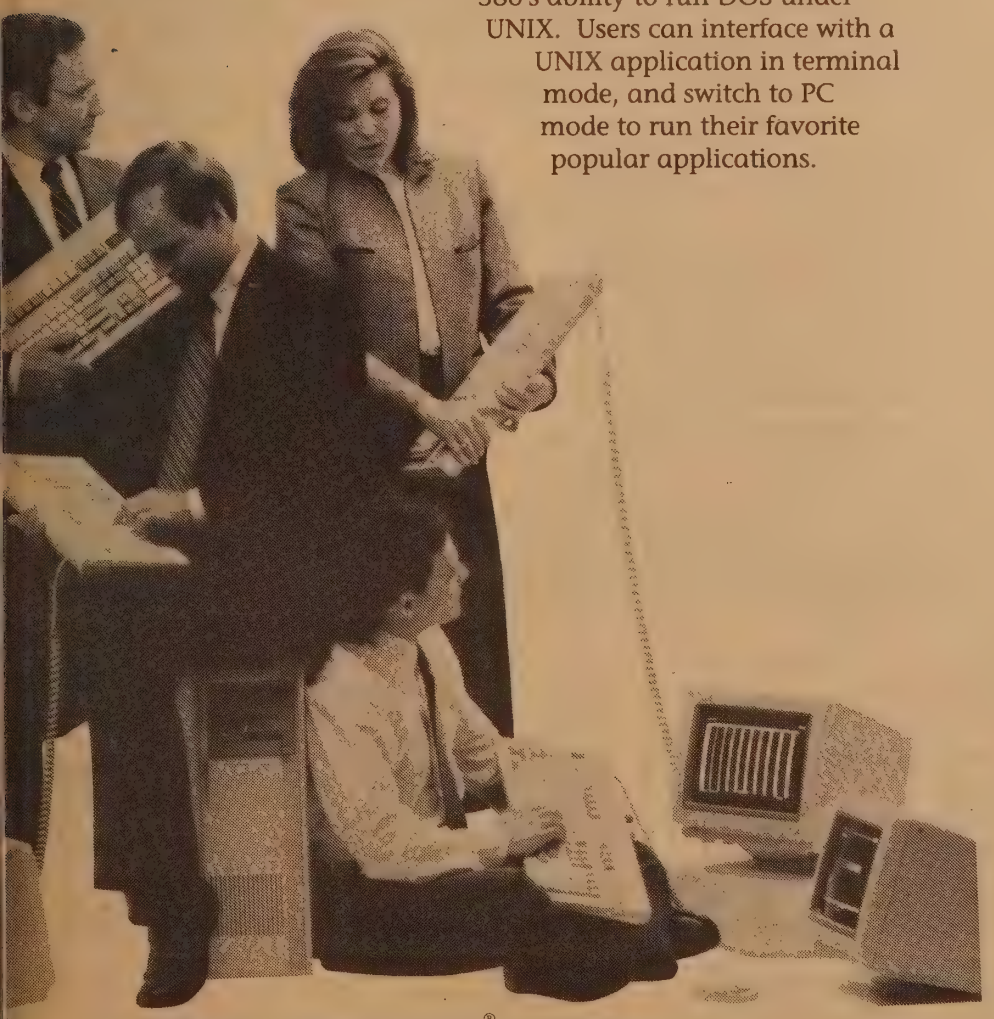

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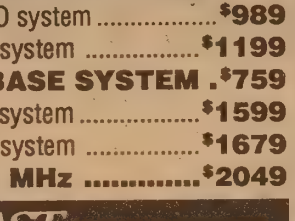

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October 4–6 Software Maintenance Course. San Francisco. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

October 5 HyperCard I Class. Fort Mason Center, San Francisco. Computer Alliance. Call: (415)771-1671.

October 5 Producing Publicity Materials On The Mac Class. Fort Mason Center, San Francisco. Computer Alliance. Call: (415)771-1671.

October 6 Alliance Japan: How To Succeed In Japanese High Technology Markets. San Francisco. Computerworld. Call: Wendy Germain, (617)577-9544.

October 6 Intermediate WordPerfect Seminar. Prolog Financial Systems. Call: (415)441-3117.

October 6 PageMaker Part I Class. Fort Mason Center, San Francisco. Computer Alliance. Call: (415)771-1671.

October 7 Computer Show & Sale. Vallejo. East-West Computer Shows. Call: (415)388-8893.

October 10 Basic Macintosh Class. Fort Mason Center, San Francisco. Computer Alliance. Call: (415)771-1671.

October 10 User Group Meeting: Ratliff Software Shows Vulcan And Emerald Bay. Silicon Valley dBASE User Group. Call: Michael Masterson, (408)723-3471.

October 11 Expert System Design And Management Seminar. Prolog Financial Systems. Call: (415)441-3117.

October 11 PageMaker Part I Class. Fort Mason Center, San Francisco. Computer Alliance. Call: (415)771-1671.

October 11–14 The Software Publishers Association Fiftieth Annual Conference. Montreal, Canada. Software Publishers Association. Call: (202)452-1600.

October 12 HyperCard II Class. Fort Mason Center, San Francisco. Computer Alliance. Call: (415)771-1671.

October 12 Microsoft Word, Part I Class. Fort Mason Center, San Francisco. Computer Alliance. Call: (415)771-1671.

October 12–13 Time Line 3.0 Workshop. San Francisco. Symantec. Call: (415)898-1919.

October 13 Fundamentals Of UNIX Seminar. Prolog Financial Systems. Call: (415)441-3117.

October 14 Basic Macintosh Class. Fort Mason Center, San Francisco. Computer Alliance. Call: (415)771-1671.

October 14 Computer Show & Sale. Hayward. East-West Computer Shows. Call: (415)388-8893.

October 14 De Anza College Computer Mart. Cupertino. De Anza College. Call: (408)996-4581.

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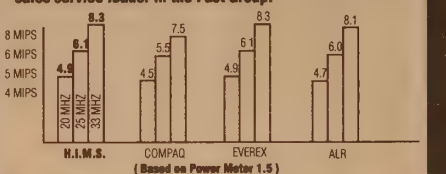

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October 14 De Anza College Computer Mart. Cupertino. De Anza College. Call: (408)864-8581.

October 14 Shop Till Ya Drop Computer Shop. San Francisco. Richard James. Call: 1-800-433-7469.

October 16 Adobe Illustrator II. Fort Mason Center, San Francisco. Computer Alliance. Call: (415)771-1671.

October 17 Automating Your Business Accounting System: Find Out Where To Begin. San Francisco. J.C. Lukrich & Co. Call: (415)864-6770.

October 17 HyperCard III Class. Fort Mason Center, San Francisco. Computer Alliance. Call: (415)771-1671.

October 17 PageMaker Part I Class. Fort Mason Center, San Francisco. Computer Alliance. Call: (415)771-1671.

October 17–20 Supercomputers, Hypercubes, & High Performance Architectures Course. San Francisco. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

October 18 Basic Macintosh Class. Fort Mason Center, San Francisco. Computer Alliance. Call: (415)771-1671.

October 18 Financial Modeling With Lotus 1-2-3 Seminar. Prolog Financial Systems. Call: (415)441-3117.

October 18 MDTA Meeting: Local Success Stories. Walnut Creek. Mount Diablo Technology Association. Call: (415)932-4828.

October 18 Producing Your Newsletter On The Mac Class. Fort Mason Center, San Francisco. Computer Alliance. Call: (415)771-1671.

October 20 PageMaker Part II Class. Fort Mason Center, San Francisco. Computer Alliance. Call: (415)771-1671.

October 21 dBASE Made Simple Seminar. Prolog Financial Systems. Call: (415)441-3117.

October 21 Microsoft Word, Part I Class. Fort Mason Center, San Francisco. Computer Alliance. Call: (415)771-1671.

October 23 Basic Macintosh Class. Fort Mason Center, San Francisco. Computer Alliance. Call: (415)771-1671.

October 23–24 Time Line 3.0 Workshop. San Francisco. Symantec. Call: (415)898-1919.

October 24–27 CASE: Computer-Aided Software Engineering, Hands-on Course. San Francisco. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

October 24 HyperCard I Class. Fort Mason Center, San Francisco. Computer Alliance. Call: (415)771-1671.

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w/20 MB Hard Disk (65 ms/MFM)	$748	$873	$903	$1,208	$1,268	$1,368	$1,538
w/42 MB Hard Disk (39 ms/MFM)	$858	$983	$1,013	$1,318	$1,378	$1,478	$1,648
w/80 MB Hard Disk (28 ms/MFM)	$1,128	$1,253	$1,283	$1,588	$1,648	$1,748	$1,918
386/16SX (1 MB)							
Basic System	$908	$1,033	$1,063	$1,368	$1,428	$1,528	$1,698
w/42 MB Hard Disk (39 ms/MFM)	$1,218	$1,343	$1,373	$1,678	$1,738	$1,838	$2,008
w/65 MB Hard Disk (25 ms/RLL)	$1,358	$1,483	$1,513	$1,818	$1,878	$1,978	$2,148
w/80 MB Hard Disk (28 ms/MFM)	$1,488	$1,613	$1,643	$1,948	$2,008	$2,108	$2,278
386/20 (1 MB)							
Basic System	$1,198	$1,323	$1,353	$1,658	$1,718	$1,818	$1,988
w/42 MB Hard Disk (28 ms/MFM)	$1,538	$1,663	$1,693	$1,998	$2,058	$2,158	$2,328
w/65 MB Hard Disk (25 ms/RLL)	$1,618	$1,743	$1,773	$2,078	$2,138	$2,238	$2,408
w/80 MB Hard Disk (28 ms/MFM)	$1,778	$1,903	$1,933	$2,238	$2,298	$2,398	$2,568
w/112 MB Hard Disk (17 ms/ESDI)	$2,363	$2,488	$2,518	$2,823	$2,883	$2,983	$3,153
w/157 MB Hard Disk (17 ms/ESDI)	$2,713	$2,838	$2,868	$3,173	$3,233	$3,333	$3,503
386/25 (1 MB)							
Basic System	$1,358	$1,483	$1,513	$1,818	$1,878	$1,978	$2,148
w/42 MB Hard Disk (28 ms/MFM)	$1,698	$1,823	$1,853	$2,158	$2,218	$2,318	$2,488
w/65 MB Hard Disk (25 ms/RLL)	$1,778	$1,903	$1,933	$2,238	$2,298	$2,398	$2,568
w/80 MB Hard Disk (28 ms/MFM)	$1,938	$2,063	$2,093	$2,398	$2,458	$2,558	$2,728
w/112 MB Hard Disk (17 ms/ESDI)	$2,523	$2,648	$2,678	$2,983	$3,043	$3,143	$3,313
w/157 MB Hard Disk (17 ms/ESDI)	$2,873	$2,998	$3,028	$3,333	$3,393	$3,493	$3,663

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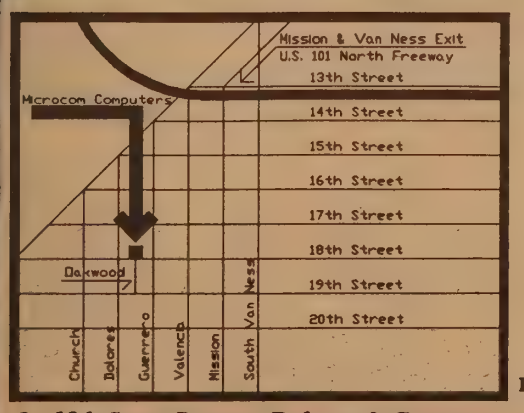

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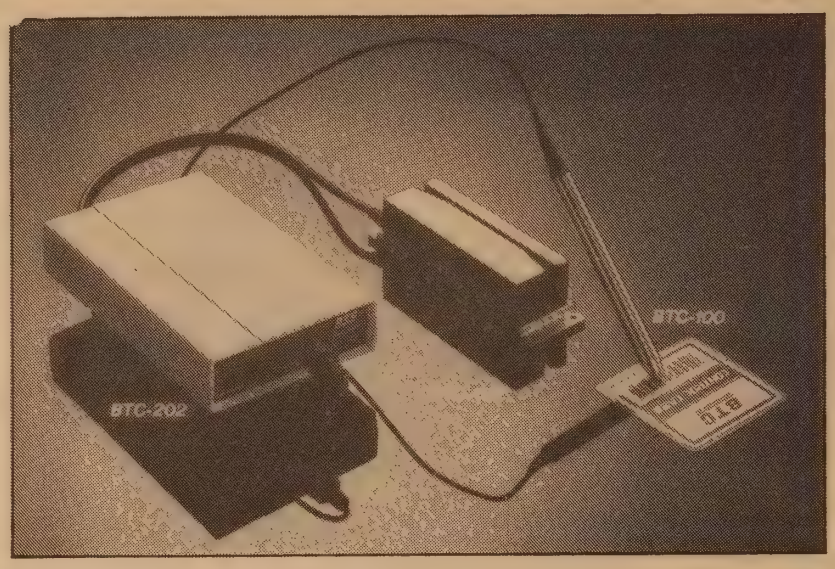

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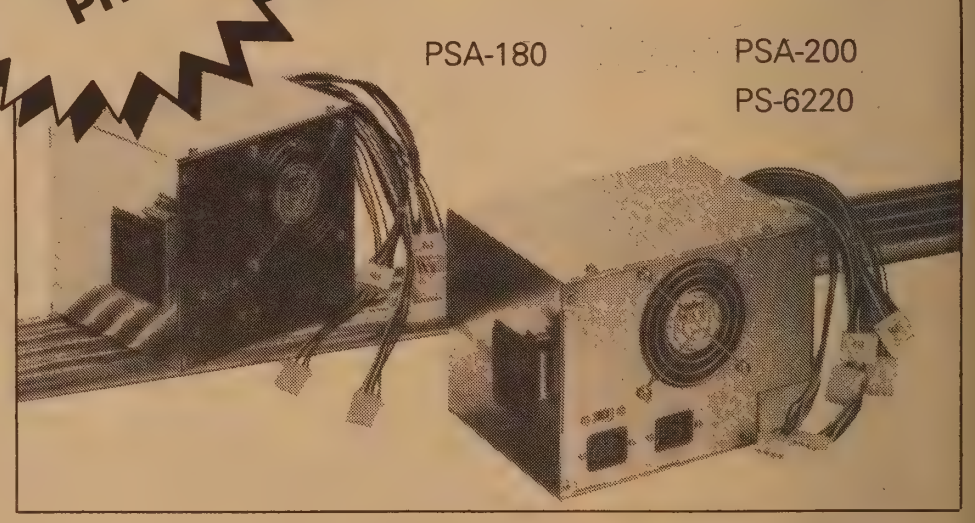

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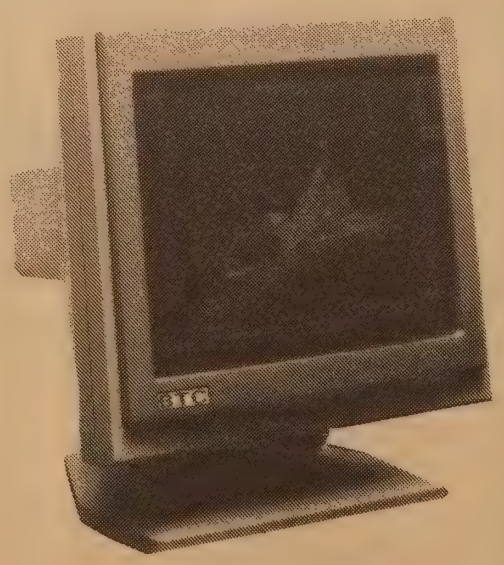

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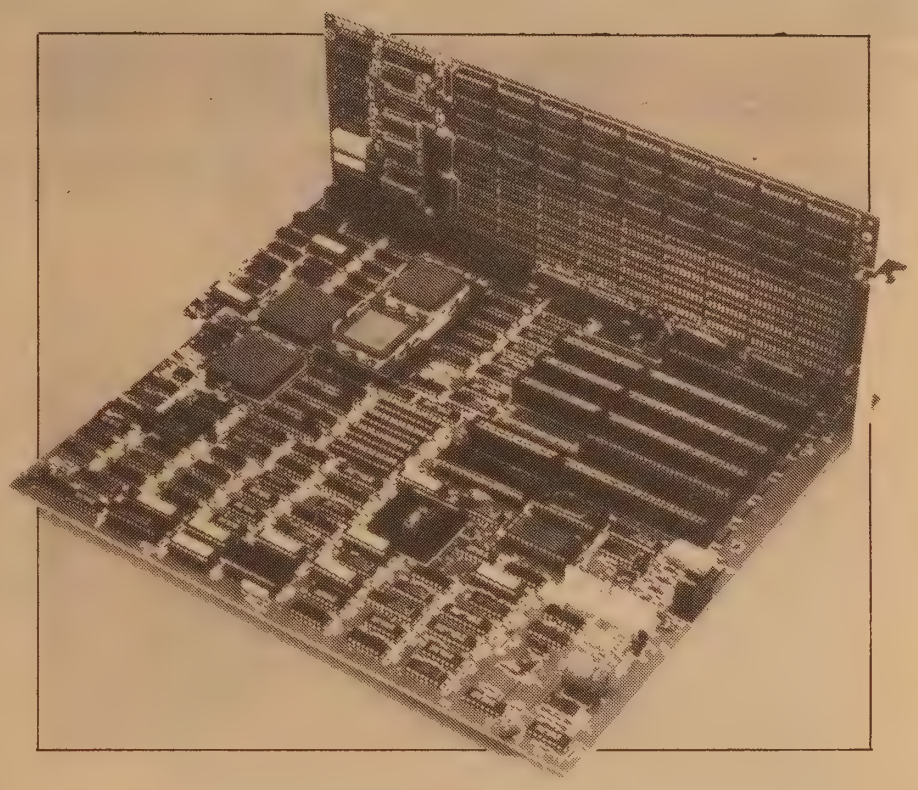

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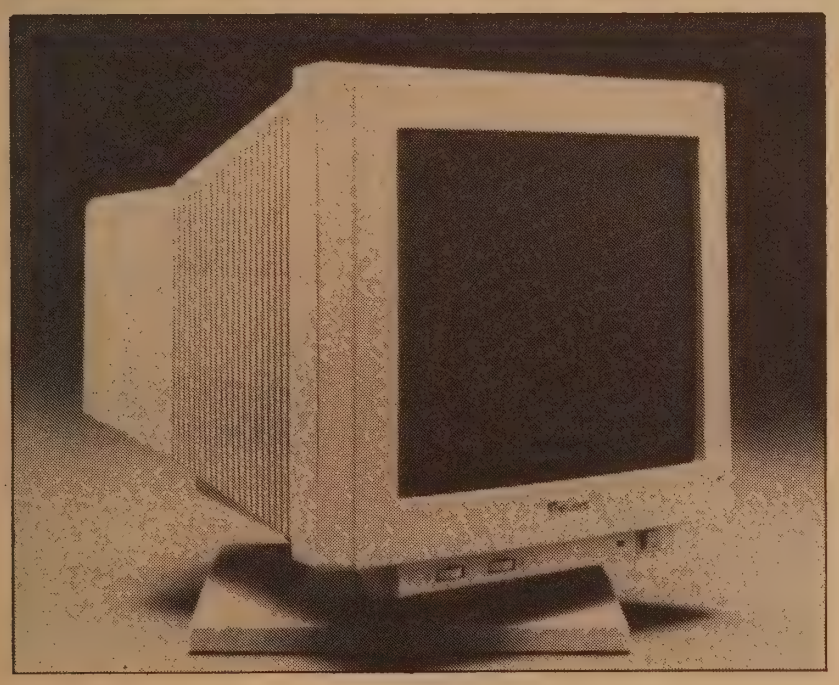

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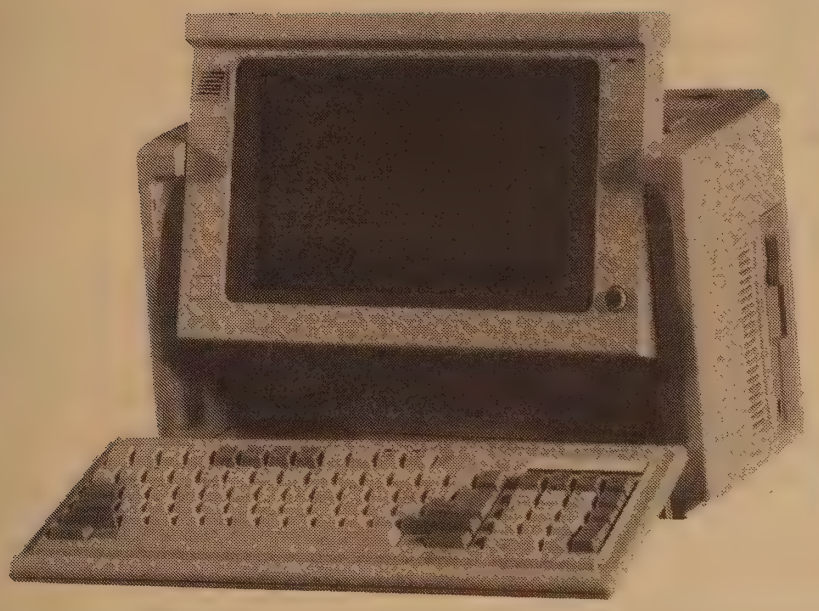

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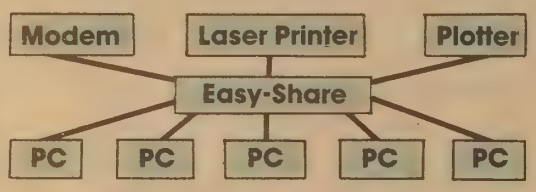

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NEWS AND ANALYSIS

BY PAUL HOFFMAN

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Paul Hoffman is an industry analyst who has been covering microcomputer technology for ten years. He can be reached on USENET (phoffman@well) and MCI Mail (264-3171). He also writes popular microcomputer books.

Apple-Microsoft Again; Tiny Portable From Zenith

Apple-Bashing In the Press: What Really Happened In Court

A few weeks ago, the judge in Apple's lawsuit against Microsoft and Hewlett-Packard said that the only relevant evidence in the suit concerned the features in *Windows* version 2 that were not in *Windows* version 1.

This ruling is not all that surprising, given that the judge had already said that Apple's 1985 agreement with Microsoft gave Microsoft the right to produce and sell *Windows* version 1. The new ruling dealt exclusively with evidence that could be presented during the rest of the trial. Much of the popular and computer press, however, misunderstood the ruling and decided that the judge had somehow ruled against Apple. The ensuing articles sounded like press releases from the Microsoft lawyers that indicated that the lawsuit was all but finished.

To the casual observer, this may have seemed like a devastating blow to Apple since the Apple lawyers made strong statements about the importance of looking at all of the elements of *Windows* when evaluating infringement. However, lawyers always make sweeping statements that sound like do-or-die commitments. Of course, Apple would have preferred that the court looked at the whole of *Windows* version 2: it looks just like the Macintosh and they would therefore not have a hard time showing infringement. The judge simply said that they couldn't do that, since their 1985 agreement gave Microsoft fairly wide latitude in what it could use.

Apple still has a strong case with the use of overlapping windows, the major user interface difference between versions 1 and 2. When *Windows* was first announced (years before it was released), Bill Gates made a big deal about how tiled windows were better and more natural than overlapping windows. Microsoft decried overlapping windows for allowing users to completely hide other windows and to not see what was happening in each window. However, when version 2 was announced, these concerns weren't mentioned.

The big question that remains in the case is whether Apple even owns the copyright on overlapping windows. Certainly, Apple was not the first company to use overlapping windows in a commercial product. Beyond that, it is not clear whether any judge will allow a company to own the copyright to a look that is really more a concept, since concepts cannot be copyrighted.

Other judges have allowed copyrighting of the look of the screen based on the concepts of visual copyrights in the movie and art fields, but this was usually in cases where the accused infringers were trying to look identical. The original *Windows* interface is clearly not identical to the Macintosh interface. Microsoft added many features, such as control menus for windows, and left out many features, such as automatic display of keyboard equivalents in menus.

The most likely outcome of the current case will be an appeal. Apple's lawyers say they have been wrongfully restricted from showing the differences between the version 1 and version 2 interface in the context of all the features and will appeal the current ruling if it ends up losing. Microsoft claims that Apple has never owned any of the interface and will thus most likely appeal if the jury decides that Apple owns anything. As the lawyers slug it out and make pronouncements in court, both Apple and Microsoft continue to slowly change their products to match their perceptions of the desires of their users, while Hewlett-Packard's New Wave languishes.

Zenith Gets Tiny With New Minisport

If what you want is a very, very small portable MS-DOS computer, you can safely assume that Zenith has the answer. The new Minisport weighs less than six pounds and measures only 12.4 X 9.8 inches; with the lid closed, it is only 1.3 inches high. The standard model comes with one megabyte of RAM and MS-DOS 3.3 in ROM (along with a file transfer program). It comes with the standard features of most modern portables: an 80C88 CMOS CPUC, a parallel and a serial port, and an external video port for hooking up a real monitor. It has an internal 2" floppy drive that uses the diskettes that have become standard for still-video cameras. It also has a floppy port for attaching a standard 3.5" or 5.25" floppy drive. The 640 X 200 pixel screen with backlighting is comparable in readability with other larger portables.

The cost is much lower than other super-small PC's: $2,000. Zenith says that it can keep the cost this low by starting with very high production. It expects that the Minisport (and its major competitor, the NEC UltraLite) will be a strong seller due to size and weight problems with most other portables. Zenith is a strong player in the larger portable market and has landed many large government contracts for its portables. The Minisport will help it bolster its low end with a product that is unmatched by any of its major

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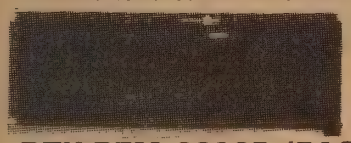

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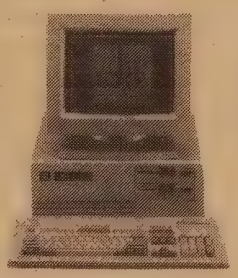

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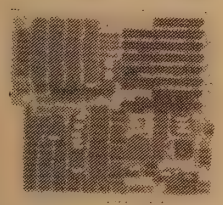

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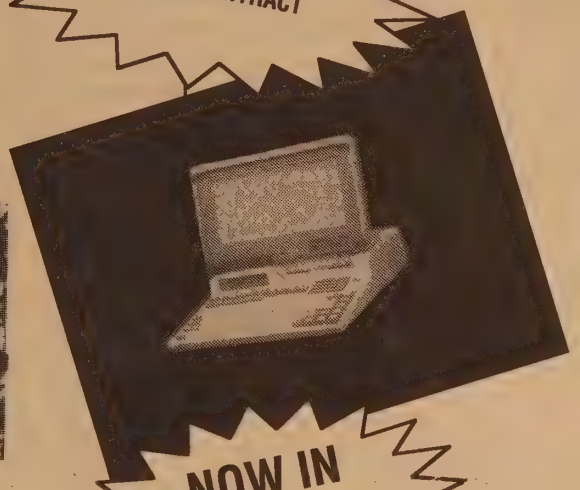

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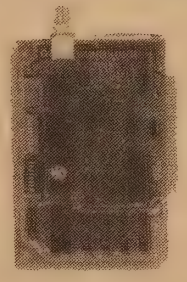

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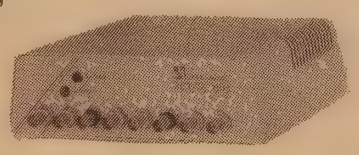

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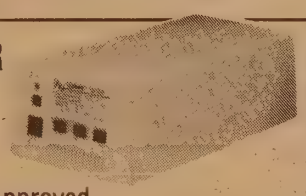

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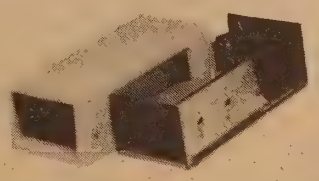

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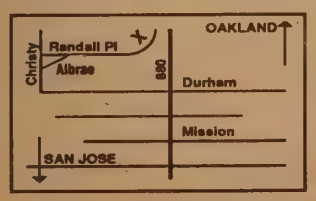

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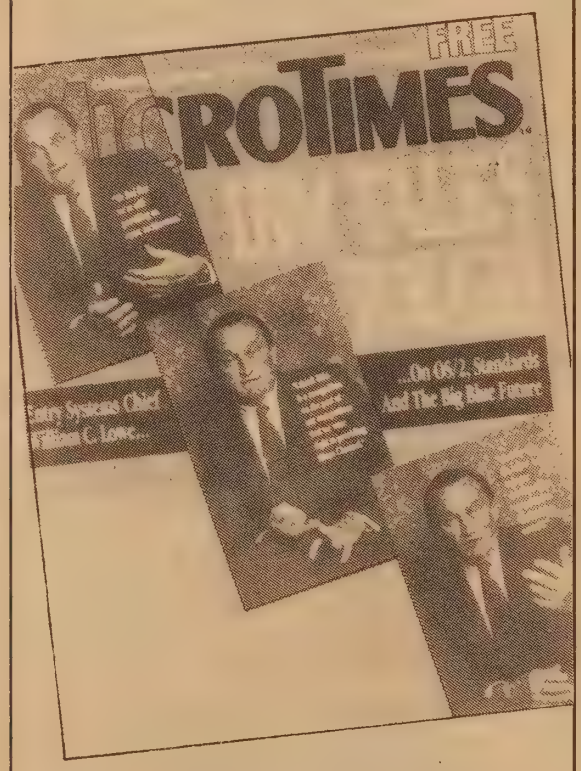

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NEWS AND ANALYSIS

competitors. Toshiba, the strongest seller of portables in this country despite the punitive tariffs placed on it, could come out with a system as small as the Minisport, but is unlikely to be able to begin shipments immediately.

The Minisport's battery should last an average of three hours if you do not use backlighting and all of the machine's ports, according to Zenith. In some cases, the user can get over four hours of use from a single charge. The battery is removable and is recharged externally, one of the ways that Zenith reduced the size and weight of the machine. The 2" disk drive is the weakest part of the package, since Zenith is the first computer manufacturer to use the small format. However, since most of the Japanese still-video cameras that are being released in Japan and the United States are based on the small diskettes, the supply is virtually guaranteed for the foreseeable future. The drives and diskettes are made by two Japanese industry leaders, Panasonic and Sony. Having a single floppy that is impervious to battery loss should be more significant to most users than the currently non-standard size, according to Zenith. Also, the RAM in the system is backed up by a pair of lithium batteries that should last for three days.

Compaq Licenses IBM Technology; Says It Still Won't Build MCA Systems

IBM and Compaq have finally came to an agreement on technology licensing that gives both companies a wide variety of options for using each other's patents. Compaq will pay IBM an undisclosed sum over the course of five years; the company said that the sum is within the amount that it had expected and should not adversely affect Compaq's bottom line.

Industry analysts immediately jumped on the contract as a 180 degree turn-around from Compaq's earlier statements about not producing Micro Channel Architecture (MCA) systems. However, Compaq president Rod Canion said that although the agreement definitely covered MCA, Compaq had no intention of using that technology.

The agreement covered all patents for PCs, peripherals, and "other advanced computer technologies," according to Compaq. An interesting part of the agreement is that it covers all patents up to July 1, 1993, not just current technologies. Compaq said that it sought the license because it felt that it might have already owed IBM money, and also to get access to some advanced technologies that are not being exploited by other clone manufacturers. It is likely that two of Compaq's first targets will be software patents for advanced operating systems that can run on Intel architecture and patents on some chip building processes.

IBM's move to exchange technology with Compaq follows its standard procedures of exchanging technology for technology, not just for money. IBM has already exchanged licenses with many other manufacturers who had non-PC technologies that IBM wanted. The agreement with Compaq was probably the most PC-specific one and thus involved the most money. However, it also gives Compaq the greatest access to breaking away from standard clones into full systems such as telecommunications and networks.

EISA: A Standard In Search Of A Purpose?

Intel announced last month that it has begun shipping sample chips to manufacturers who want to create EISA-based computers.

EISA, you may remember, is the standard that all the major PC clone manufacturers rallied around last year to show their opposition to IBM's proprietary MCA(Micro Channel Architecture) standard. MCA is the hardware basis for IBM's PS/2 series of computers; it defines a different type of bus slot and circuitry for boards that you add to your PC. IBM hopes that MCA will replace the old architecture, dubbed ISA for "Industry Standard Architecture."

Regardless of what Bill Gates says, good old PCs with 8088s and 8086es in them are still selling well. Since EISA only works with 80286 and 80386 chips, manufacturers would have to ignore a low-end market that refuses to die.

Not to be outdone, nine of IBM's major competitors formed a committee to further a new standard, EISA (for "Extended Industry Standard Architecture"). However, it took many months of wrangling to determine the specifications for the bus, and development of the chips needed to run EISA slipped as the committee revised the standard.

Last month, Intel became the first chip manufacturer to supply samples of chips that hardware manufacturers could use to create EISA-based systems. Other chip manufacturers are working on similar sets, but it appears that the EISA chips became much less important to them when the standard dragged on and buyers' desire for EISA systems never materialized. Thus, Intel has a clear advantage in the race to supply the needed technology. In its announcement, Intel said that it expects

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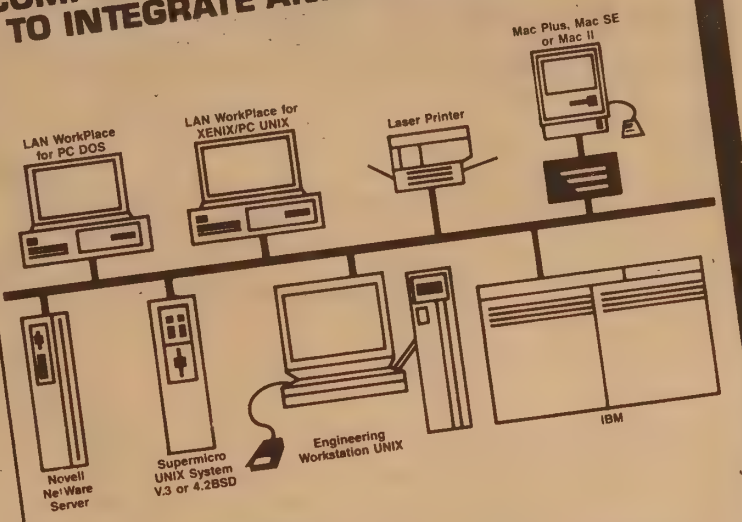
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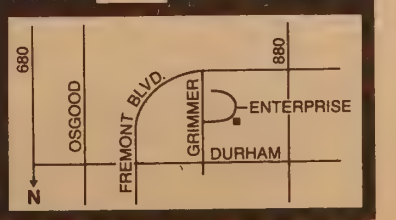

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at least half a dozen manufacturers to be showing EISA-based prototypes at the COMDEX trade show in early November. Many manufacturers, including Compaq and Hewlett-Packard, expect to be shipping EISA-based systems to customers by the end of this year.

Now the big question is, "So what?" Does the world need a third standard for PCs? IBM has sold over a million MCA-based systems, but many buyers say that they would have bought the same systems if they had used the ISA bus, as long as they were from IBM. EISA manufacturers will have the same problem that IBM did when the systems first came out: there are no EISA boards to work with the systems.

The big advantage of EISA is that EISA systems will work with all the 16-bit ISA cards available now. However, since EISA systems will surely cost more than similarly-configured ISA equivalents, why not just buy an ISA system? According to the *Microprocessor Report*, the two competing systems are pretty much the same when it comes to features. EISA has the advantage of accepting ISA boards, but MCA already has lots of boards that work with it. Given that ISA systems are still selling rapidly, EISA would need some big advantages to the buyer (not to the manufacturer) to make it attractive.

Intel's announcement also brought up many issues that have been simmering in the clone market about who should control what. Intel was on the board that decided what EISA would look like; this justifiably irked many other chip vendors. Many vendors had already spent millions of dollars on creating MCA chip sets for clone makers, only to see only lukewarm interest in them.

And, regardless of what Bill Gates says, good old PCs with 8088s and 8086es in them are still selling well. Since EISA only works with 80286 and 80386 chips (and, one would assume, 80486es when they become available), manufacturers would have to ignore a low-end market that refuses to die.

Morris Jr. Charged With Computer Abuse

Cornell University graduate student Robert Morris Jr. was formally charged with preventing use of federal computers by releasing a worm over the Internet network last year. Morris, who was recently suspended by Cornell and has been working as a programmer in Boston, said that he would plead innocent and fight the charges.

Although Morris has admitted that he was responsible for the program that moved over the network, forcing system administrators to shut their machines down and eradicate the program, he denies that he is guilty under the Computer Fraud and Abuse Act of 1986. The indictment came after a federal grand jury in Syracuse, New York, heard testimony from Morris' friends and reviewed records from Cornell's computer system. He could face as much as five years in prison and a $250,000 fine, although it is unlikely that he will serve any time in jail even if he is convicted. ■

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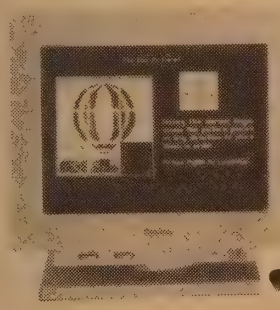

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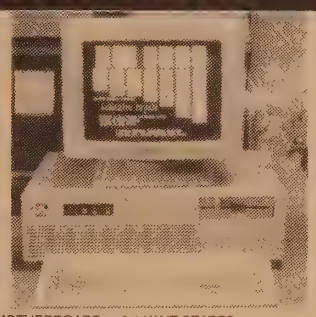

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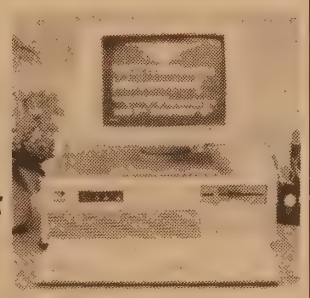

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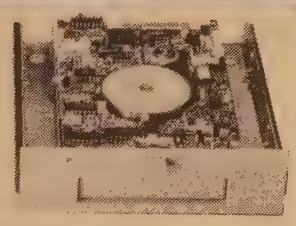

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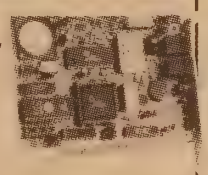

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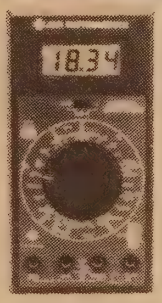

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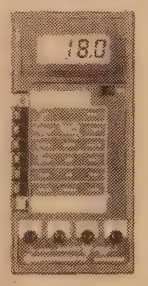

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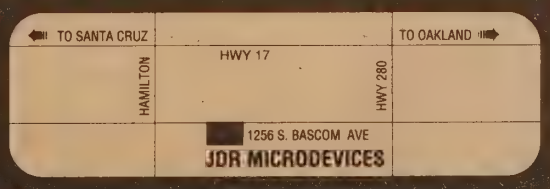

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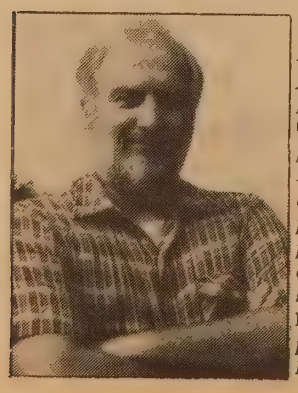
We may not have to wait for Pac Bell to creep up on the idea. If I remember California PUC phone tariffs correctly, one of their little-publicized rules requires that the regulated local operating companies make their phone book listings available on magtape for a reasonable fee. This may permit any entrepreneur—who wants to sell useful databases and/or much-enhanced advertising (reaching computer-using, upscale "readers")—to jump in and offer a truly modern phone book.

Files & Fax

Kenneth Clark, from Beyond Software & Engineering in Garden Grove, sez: Faxboards transmit at 9600 baud and are cheaper than 9600-baud modems. Let's feed ASCII and binary files (or compressed files) directly through the faxboard's 9600-baud transmitter, and snatch them directly from the receiving faxboard's 9600-baud receiver—after it does the error detection and correction.

Faxboard makers—add the necessary hooks, and catch more market share.



Copyright © 1989 by Jim Warren. All rights reserved. *Jim Warren founded the West Coast Computer Faire, the* Silicon Gulch Gazette *and* Infoworld *newspapers, Video Initiative and the DataCast proposal for broadcast-based paperless electronic newspapers utilizing personal computers. He was the founding host of the PBS* Computer Chronicles *series, founding editor of* Dr. Dobb's Journal, *and founding president of the Microcomputer Industry Trade Association.*

Earsight

A dusty letter of long ago from "a UC-Berkeley Computer Center employee" suggests a possible aid for the visually impaired, which was suggested by two of his experiences: via sound images, while listening to binaural music and interviews on earphones, he "saw" where the instruments were placed and where those speaking were located. And for about $30, he bought some stereo headphones with microphones pointing out of each ear.

If an ultrasonic beeper were placed on the head, and the microphones would sense ultrasonic bounce-back off of nearby objects (and lower the frequency down to human hearing range, with circuitry to block the original beep), perhaps blind people could get a sort of audio-radar image of their immediate surroundings.

Note that ultrasonics may have better imaging properties than audible sounds.

For Teachers, Industry, And The Future

Everyone would benefit if computer companies offered teachers full-time, three-month jobs each summer, as suggested by People's Computer Company founder Bob Albrecht.

Teachers could then learn current computer developments and business realities—good and bad. This could be particularly valuable for teachers with little or no technical background and no business experience. It would also provide a valuable change of pace from daily classroom pressures.

And, by thus working a full year, teachers would have an income more comparable to that of other professionals who work year-round.

Computer Companies Also Benefit

Teachers can provide often-needed fresh insights; after all, they are the society's foremost "knowledge workers." Good teachers are experienced in communicating new concepts and complex information to naive and uninformed "users," and motivating their learning and use of "information tools." They have invaluable insights into the abilities and limitations of about-to-be young adults—the dominant user-base for many companies' products and services.

Such insights are essential for user interfaces that are truly user-friendly. Many companies would benefit from having professionals from the massive "education market" become more familiar with their company and its offerings.

Such summer employees might also fill in while regular staff take their several-week vacations, without the problems of many "temps" nor the other problems of filler-employees who actually want long-term jobs. Over time, such summer employees would also form a cadre of already-trained part-timers upon whom companies might call during the "push periods" that are so common to our wildly cyclic industry.

Benefits For Kids And Society

Most important: It is clear that our societal and national future depends on how well we and our children learn to participate in the post-industrial Information Age. Teachers must be offered opportunities to experience and become comfortable with using information tools—and understand their limitations. Teachers can only teach what they themselves understand.

For our well-being, teachers need experience in the business and technology worlds that compose major segments of our society and future—and their 8-1/2 month work-year offers that opportunity if industry will take advantage of it.

Equally, business and industry workers need more contact with our educators than is possible through occasional PTA meetings, etc. Working beside teachers each summer can have mutual long-term benefit—for their business is our future.

Quickies

Bob Albrecht also suggested that computer pros should have paid release-time to do volunteer work in schools—an idea of great long-term benefit.

What ever happened to cold fusion? For that matter, what ever happened to solar-voltaics? I want my beach blanket laptop. (How many solar-voltaic patents are now held by oil companies? How many solar-voltaic researchers are now employed by an oil company or its wholely-owned subsidiary?)

Trying to screen and interview for good data entry operators or word processors? The Computer-Assisted Management Society will send you four pages of suggestions, if you send 'em a self-addressed, stamped legal-size envelope (Box 82092, San Diego CA 92138).

Anti-attorneys? A friend commented that—after being burned by three different attorneys for whom he did work—he now refuses to work for *any* attorney. Interesting. (It's bemusing to have physicians and attorneys coming to me at parties, saying, "I need some advice about a computer." It's tempting to say, "See me in my office, tomorrow" or "Here's a teaser, but my consulting rates are $150 per hour.")

Don't like current politicians? Support current initiatives that limit terms of office to two or three terms, and take 1990 redistricting out of the hands of the incumbent Legislature. (Permission herewith granted for technologists to participate in our governmental process. Free, at last!)

Visions Solicited

Send suggestions to Jim Warren, Realizable Fantasies, 345 Swett Road, Woodside CA 94062. Published proposals will be attributed to their authors unless anonymity is requested. ■

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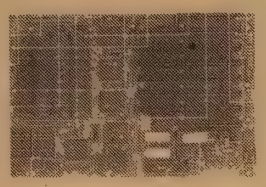

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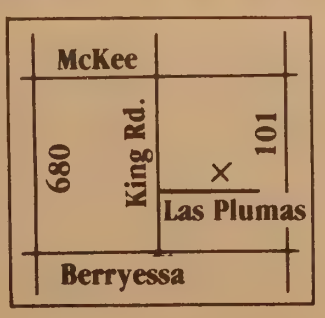

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Success With Integrity

Small Is Beautiful At Silicon Beach

By Mike Markowitz

Currently in the news again with *SuperCard* (see *HyperCard* column, this issue), San Diego-based Silicon Beach Software has been a leading purveyor of Macintosh tools since the days when it parlayed the success of its games into the development of graphics and productivity tools such as *SuperPaint* and *Digital Darkroom*.

When the Macintosh came out in 1984, it came to the attention of Charlie Jackson, a Marine veteran and DOS consultant living in San Diego. Inspired by the machine's capabilities, he became a certified Apple developer and spent his life savings on a Lisa and a Macintosh. Before the first game, *Airborne*, shipped, he and his wife had mortgaged their house to finance its production. However, the strategy of using game sales to bootstrap the development of other software proved effective: as Jackson says, "There's always room for another good game. We wouldn't hit heads with a big established company and maybe get blown out of the water because if we made a good game, it would sell. Even if there were another two good games, it would sell."

The success of *Airborne*, and later of *Dark Castle* and its successors, made the creation of tools like *SuperPaint*, *Super 3D*, and *Digital Darkroom* possible. In the years following, Silicon Beach developed a unique style of doing business and has greatly broadened its range of all-Mac products.

In a recent interview, Jackson discussed his company's evolution, its culture, and why it all works. Starting with its Hawaiian-shirted employees in their palm-tree trade show booth.

First, talk about the Hawaiian shirts.

I always wear Hawaiian shirts. We do that for a couple of reasons. One, I'd rather not wear a suit and tie. Two, if you're going to a trade show, you're trying to be noticed, and people recognize us. They know who we are, even at the parties. And parties are part of the whole thing. We want people to think we're real people and they can come talk to us.

And also, we're making a statement a little bit. We're not taking it too seriously—we don't take ourselves too seriously. We can still have our fun in this industry.

You stuck to a plan of using the games as a springboard to the productivity and high-end tools that people want in business.

Yes. Most people don't know this, but that was the plan all along. To be an entertainment software company, you must be on all computers. The Macintosh and three or four good games a year can support a company of five to eight people. Which is fine if that's what you want to do. But that isn't what I set out to do.

We did good games not because we wanted to do good games, but because we wanted to do good Macintosh software. Because I was trying to build something in the long term here, we could be competitive by building a product people would want. The way to do that is to make something that's really good, really clean, and have it be something that, for some reason, people will want. So therefore my background as a consultant comes into play, what things will sell, what things will not. I have some feel for that.

The striking thing to me is how few and how poor games have become. Are games dead?

Not really. What it is is that people aren't willing to put in the effort it takes to make a good game. They want to make a quick thing and just take six months and slap something out there in the marketplace. We've succeeded because we don't take that approach.

I sound very self-serving when I say this, but the philosophy here is that if it's really hard to do, that's what we want to do because other people won't. When the programmers come in and we talk about doing this and that, and they say, "Oh, man, that's really tough. It's gonna take six months, it's gonna take a year, it's gonna take a year and a half," my eyes light up. I see opportunity.

We're going to be focused on productivity, on graphics in particular. We're not restricting ourselves to graphics, although that is our primary focus.

You'd describe yourself more as a visionary than a technoid?

I'm an entrepreneur. People will think of me as a visionary, but I hesitate to say things like that about myself. I do play that role within this company. That's not quite the same as claiming to be a visionary in the industry.

What I bring to this company is the background and feeling for what people want and what they don't want. I'm the consumer advocate. The software has to be good. It has to be right for the everyday user before it gets by me and has to go out.

I do a lot of the design of the software. I don't come up with the new ideas. Other people here can do that. They come up with ideas, I say, "Yeah, this is good. This is not good. Yeah, we can sell this; we cannot sell this." And then as we do the product, I refine the user interface. I do a lot of the detail work

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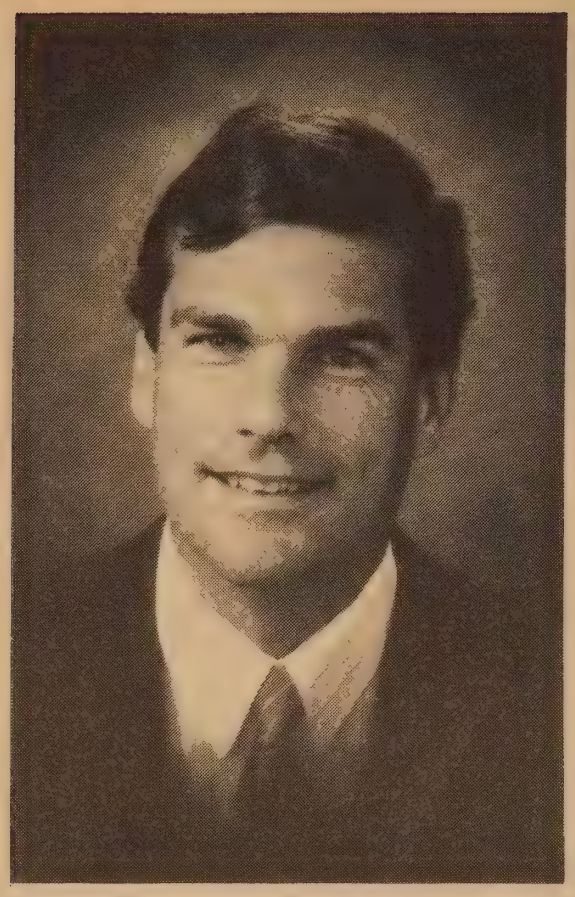

"One basic thing that I wanted to do was build this up on my own without bringing in outside financing, to which I am then beholden, and maybe even they've got control or something like that. Most companies have to get serious financing. We managed to not do that, which is quite an accomplishment."

—Charlie Jackson

on the user interface, actually.

So you're saying, "We need this feature, we don't need that."

I certainly get involved in all those sorts of decisions. Now that we've grown a lot bigger, we have other people doing all this. I don't do it all myself. We're bringing in lots of people who can take a lot of this on, and I look at those kind of details less and less now. But I'm still very closely involved with almost all of our products.

Obviously in the industry you're making a transition from a "toy" company to a "real" company. Talk a little bit about your company's problems and pitfalls in making that transition.

I'm not sure if I can identify problems and pitfalls. We identify very much with *Dark Castle* and *Beyond Dark Castle.* We recently put out another game, *Apache Strike,* which is not block-buster status like *Dark Castle* and *Beyond Dark Castle,* but is a good little game. We did those because we felt we could make some money and that those products financed the growth of the company.

One basic thing that I wanted to do was build this up on my own without bringing in outside financing, to which I am then beholden, and maybe even they've got control or something like that. Most companies have to get serious financing. We managed to not do that, which is quite an accomplishment.

You haven't had to go public or get any sort of venture capital for what you're doing?

I got a small investment in the second year from a personal friend. Going public is an option open to us later. We're not anywhere near the stature in size and revenues that you have to have to go public. So that's not an option right now.

Not too long ago I would have said, "We don't need that, I don't want to do that." I still don't want to do that. But as the company's gotten bigger now and we're starting to have to compete with companies like Claris and Aldus, we'll go public eventually. That may be something that we'll have to do in the future. That's an open question.

That's got to be driven by whatever your reality is at that time rather than personal wishes.

Yes. I've come to understand the financial side of the business. It's been a slow, steady educational process for me. I didn't come in here with a background of knowing how to run a business, knowing about large-scale financial things like that. I've got people around me that do know things like this who advise me real well.

To be honest, I've only fairly recently come to really understand what some of these things are about. What it means to get venture money and what you give up. Going public and what the pros and cons were. I used to think it was only cons. Sometimes to compete you need that stock. You need to be able to do things with that stock and with that money that you have.

We don't have the money, for example, to acquire a product in competition with Aldus. These companies are now paying two and three million dollars to buy a product, which is outrageous in my opinion. I think this will stop later, because I think that's getting a little high just to acquire the rights to a product. I'm not talking about buying a company. That's a whole different matter.

We can just continue as we are, privately held—really, "family-owned" is the way I would put it, my wife and I. She was involved right from the very beginning when we were formed. We were working out of my home for the first half a year. Shipping everything out of my house. That's what we did for quite a while.

We can continue to operate like that, and we can do that if we want, if that's really the most important thing. It will hinder us a little bit in some ways.

But we can compete with our products. They're profitable, so we can go forward. Quite simply because we've had no choice. We've had to be profitable. Think about it. We don't have outside money. So if we're not profitable, where does it come from?

There's almost an inverse relationship between the size of the company and the quality of the product. Little software boutiques where every line of code is a labor of love. Look at some of the catastrophes in the history of Mac software. Those have come from big companies. Like Jazz.

I don't think it's necessarily the size of the company. It's much more complex than that.

It's the culture?

Yeah. Rather than it just being the size of the company, the corporate culture may be more the determining factor. There's been lots of small companies that have done poor quality products as well, but you tend to forget about them because they go away. Of smaller companies, the only ones that can survive are the ones that do a really good product. With a larger company, some of them can do great products as well. Microsoft has some very good people up there. They've had some *faux pas* and all like that, but they're very strong in some of the things they're doing. *Excel* is an excellent product.

If you look at Lotus and what they did wrong with *Jazz,* a couple of things come to mind. But mainly I would say they just went along saying, "We are Lotus. We can create this product. This is what we'll say about it." And they did not really understand the Mac market. I don't know if they do yet.

The Macintosh market is dreadful. If I were going over to MS-DOS, I don't know how we would do that because I'm not sure if we know that market. But it's a little more straightforward, I think.

Well, graphics on that side are a miss.

Yeah. Just in general, if we were trying to compete in the MS-DOS world, maybe we would do something similar. But since I founded the San Diego user group, I've been right there with the Mac from the beginning, we've grown with it, we understand the Macintosh market here. And one of the aspects of it is that people won't take it just because it's Lotus and because they have *Lotus1-2-3.* They're not the same kind of people who buy the MS-DOS clone computer or even the IBM computer. They don't say, "Well, this is what everybody has, so it's better to be mainstream."

The people who have chosen Macintosh have looked and evaluated and made a decision that there's something there that they want. They're going to do the same thing with software. So they did that with *Jazz* and it didn't measure up to expectations. Another mistake Lotus made is that they got expectations too high, but that's been said before. That was a big problem. I think that what happened with *Jazz,* too, was that it was a program that needed one megabyte of memory and they tried to stuff it in a 512.

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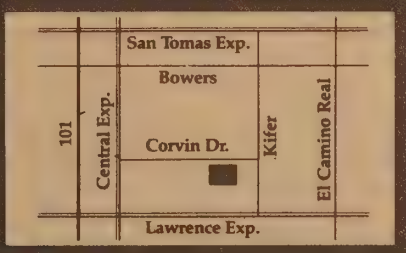

I"ll finish by saying the corporate culture is important because what that is all about is what kind of products will you produce, and will you have that real quality there, and do you understand the market that you're in?

Think about the corporate culture of the Marine Corps.

That's interesting. I've never had anybody say it that way to me. I've never really thought about that.

There's a certain commitment to excellence there.

That's right. I was a Marine officer. You know, I went through officer candidate school, which is from boot camp. And I went through seven months of basic training, which all officers went through. And I went through another couple of months of communications training. I had over a year of training.

The officer corps of the Marine Corps is one of the finest groups in the world. Well, I'm biased, but that's my opinion, that's how I feel about those people. That's why I went into the Marine Corps. I was Navy ROTC and I opted for the Marine Corps.

There's another thing that's stressed even more than excellence, and that's integrity. Integrity is the key word to a Marine officer. I had two other Marine officers working here for me in key positions. We try all along to do business right. What that means is if we tell somebody we will do something, we honor our commitment. If we have debts, we pay them.

We got hurt the second year by the bankruptcy of our largest distributor. It nearly put us out of business because they owed us so much money. We ate it. Later we got 20 cents to the dollar when we didn't need it anymore.

So we called people and said, "This is what's happened. We can't pay you all of that right now." We set up this schedule, which is what you're supposed to do in business, and we paid that schedule. My wife and I didn't get paid. The employees got paid. We paid off our debt. We didn't advertise until we finished paying off, then we advertised again.

Which explains why we didn't see anything of Silicon Beach for a short time.

Yes. The summer of '86. We did not exhibit at the Expo in Boston because we didn't have the money. We have this funny little way of doing business here. We don't spend money we don't have.

That's a very strange attitude in American business. I wish we had a government like that.

It *is* a very strange attitude. That has been a basic premise around here, and that's why we're still here. We focus on the important things: the products. The product is key. You have a good product to sell, you can stay in business. The marketing and things like that all follow along.

Yeah, we're getting much better at that stuff too, we're getting more sophisticated. We've made the transition. Basically, we're still marketing our games, which is fine. We're selling those, now we're making money off of them after all the effort we put into them. We will continue to do that as long as possible. But we aren't developing any more games in-house. We're not putting our valuable resources in developing games instead of putting them on our graphics and our productivity line.

That's just a business decision, that's just a question of where I put my limited resources. Nobody has unlimited resources, nobody. And in our case, since we don't have all this outside funding, we're not spending other people's money; we must be very careful where we spend ours.

Common sense dictates you that you put the money where you can make more money.

And I'm trying to build up a certain kind of company.

Are there some big chasms in the market where if you had a product you could sell a million of them?

In the early days of Macintosh I could just talk freely about this stuff. But the competition has really heated up now. And I know there are other people working in some of these areas, and I don't want them to know where we are. We may come in, and we may come in earlier than them and knock their socks off. There are companies that react very, very strongly to competitive moves. We saw them do this with Aldus *FreeHand* and with our autotrace technology that we showed in *Digital Darkroom*. If we hadn't shown it in January, they probably wouldn't have done anything about it.

So now we have to play our cards very close, which is a little hard for me sometimes because I like to talk about this stuff and have fun talking about it. But I'm having to be a lot more careful. ■

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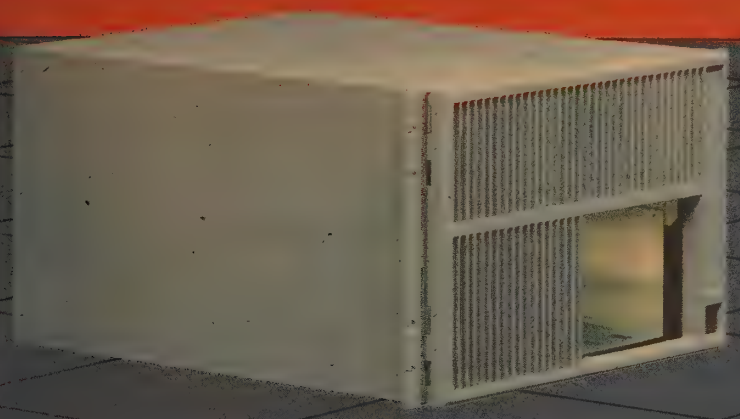

Shock mounted drives in rack configuration

Slide-out Disk Drive Enclosure

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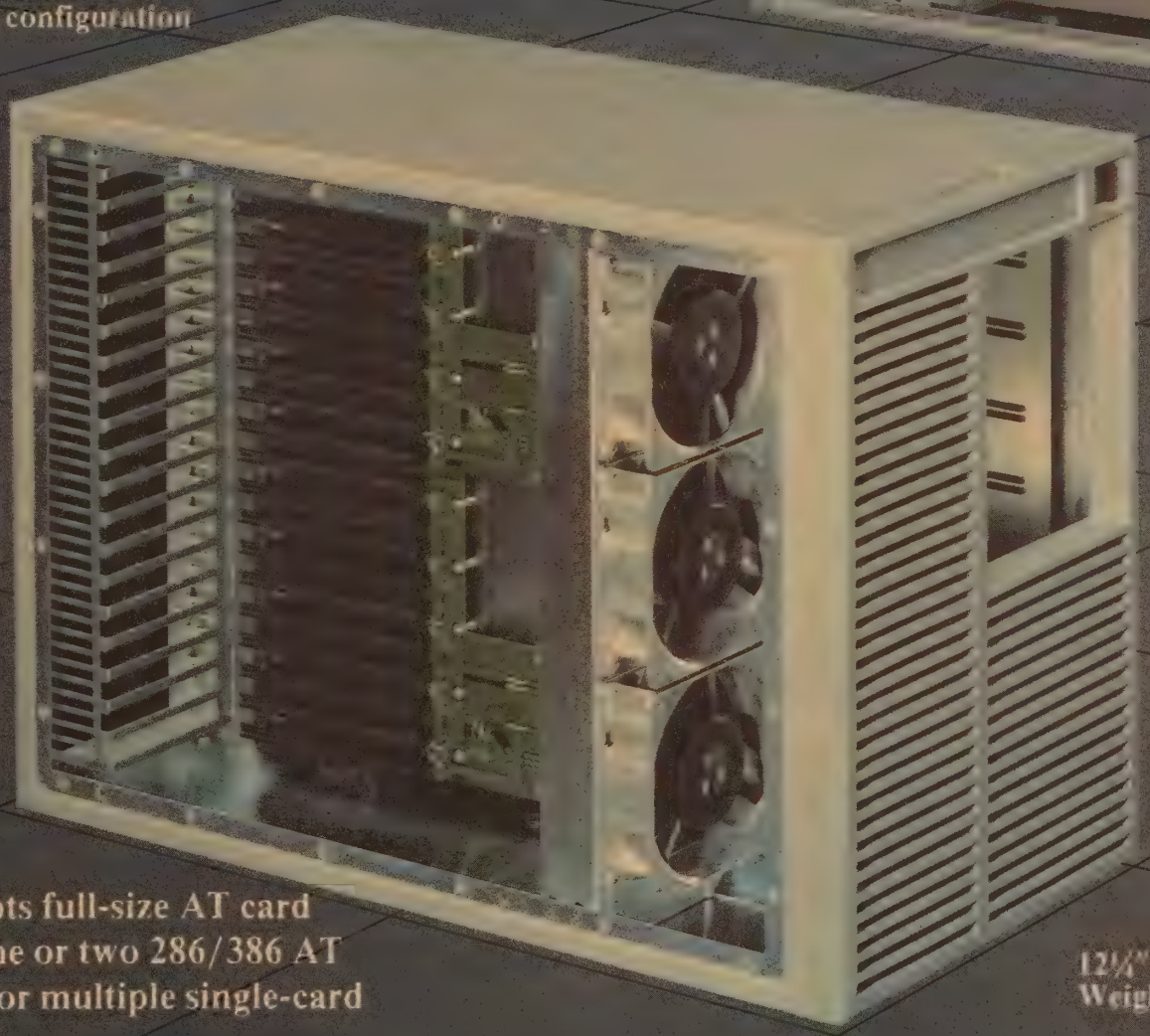

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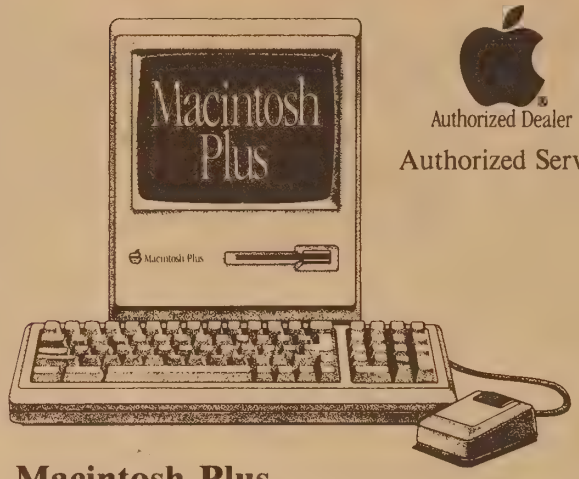

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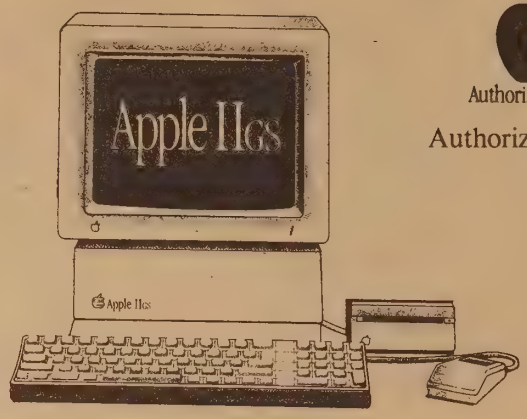

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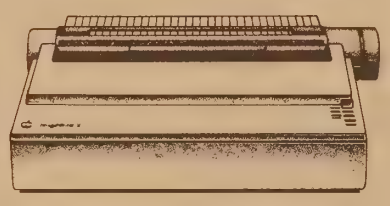

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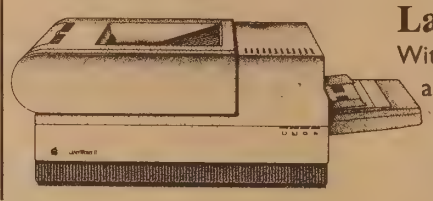

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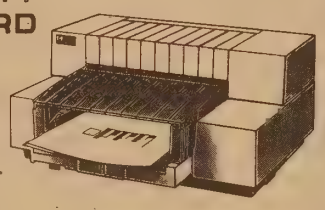

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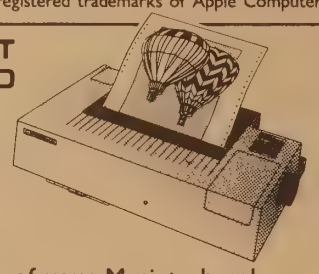

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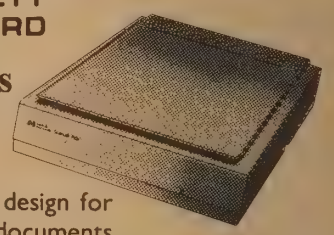

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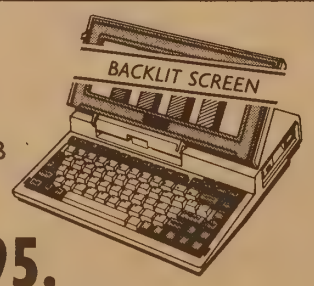

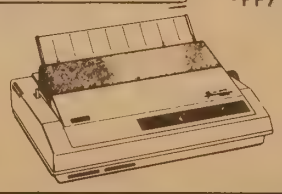

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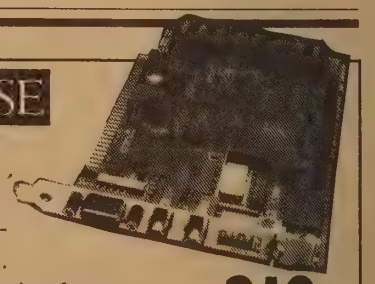

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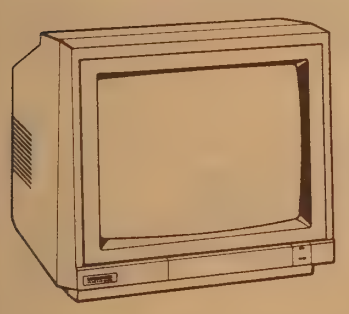

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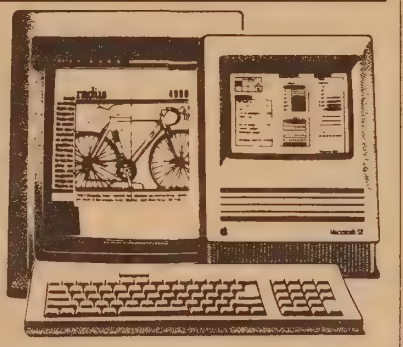

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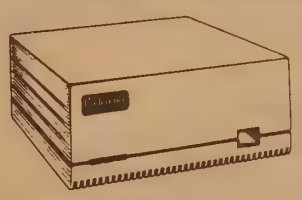

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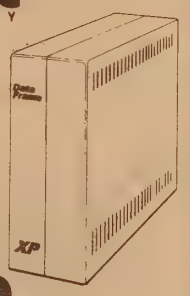

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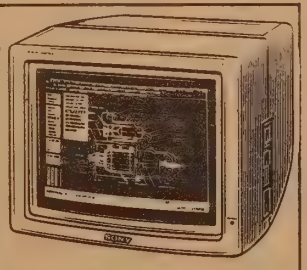

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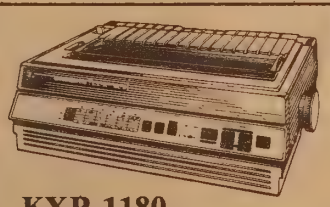

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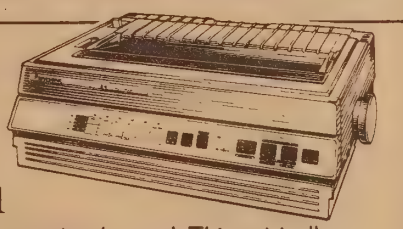

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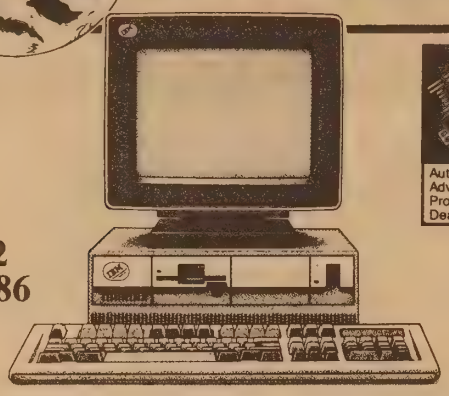

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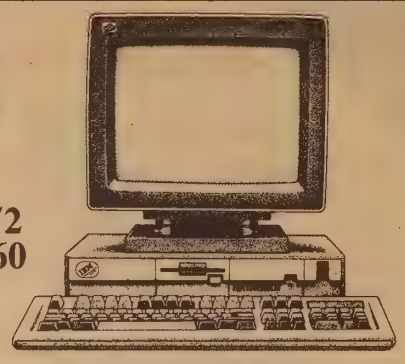

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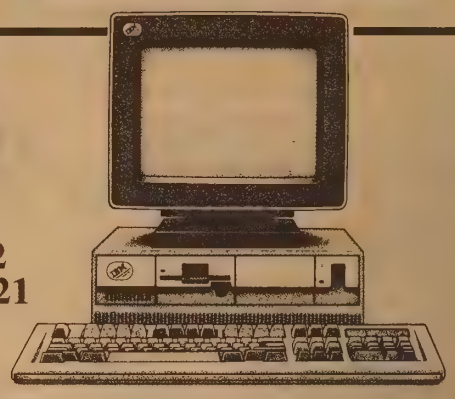

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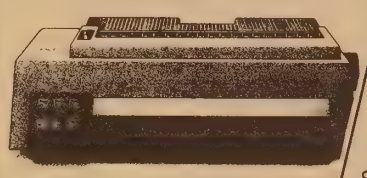

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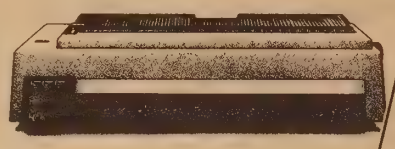

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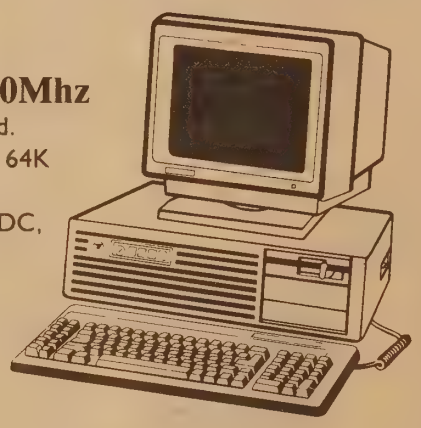

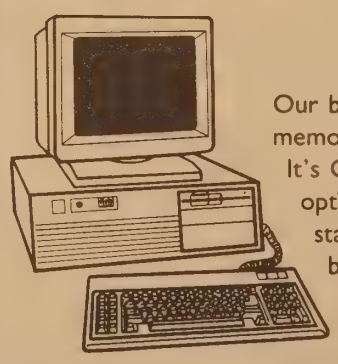

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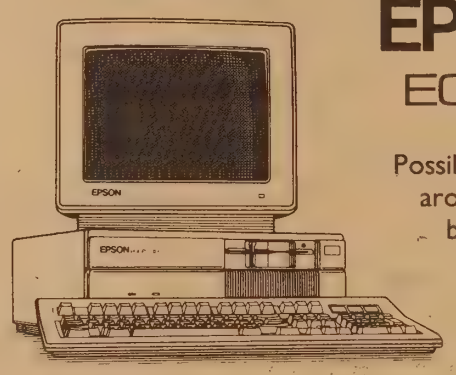

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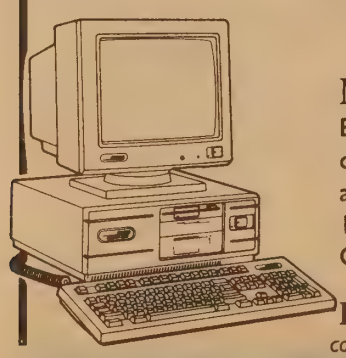

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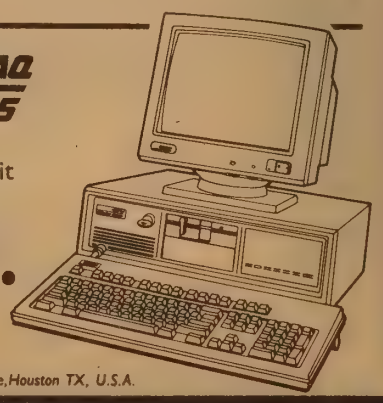

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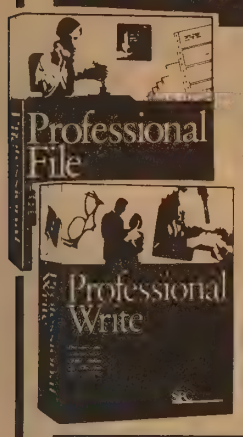

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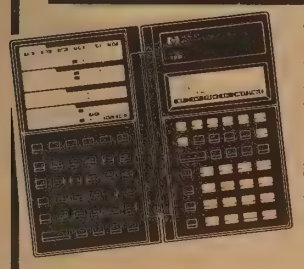

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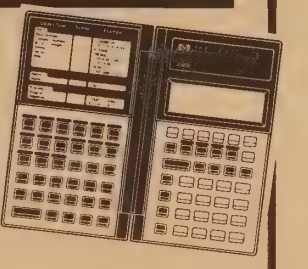

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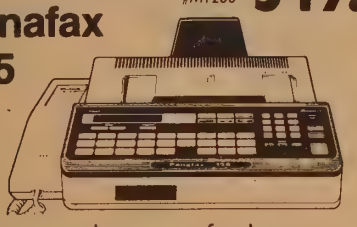

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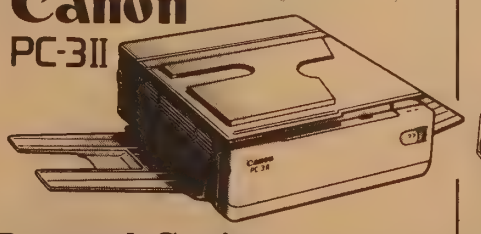

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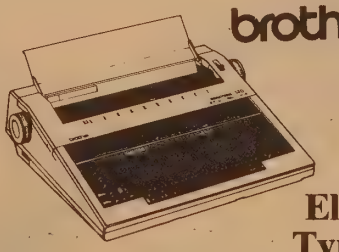

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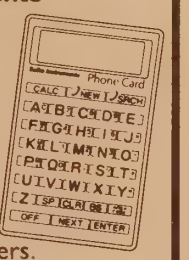

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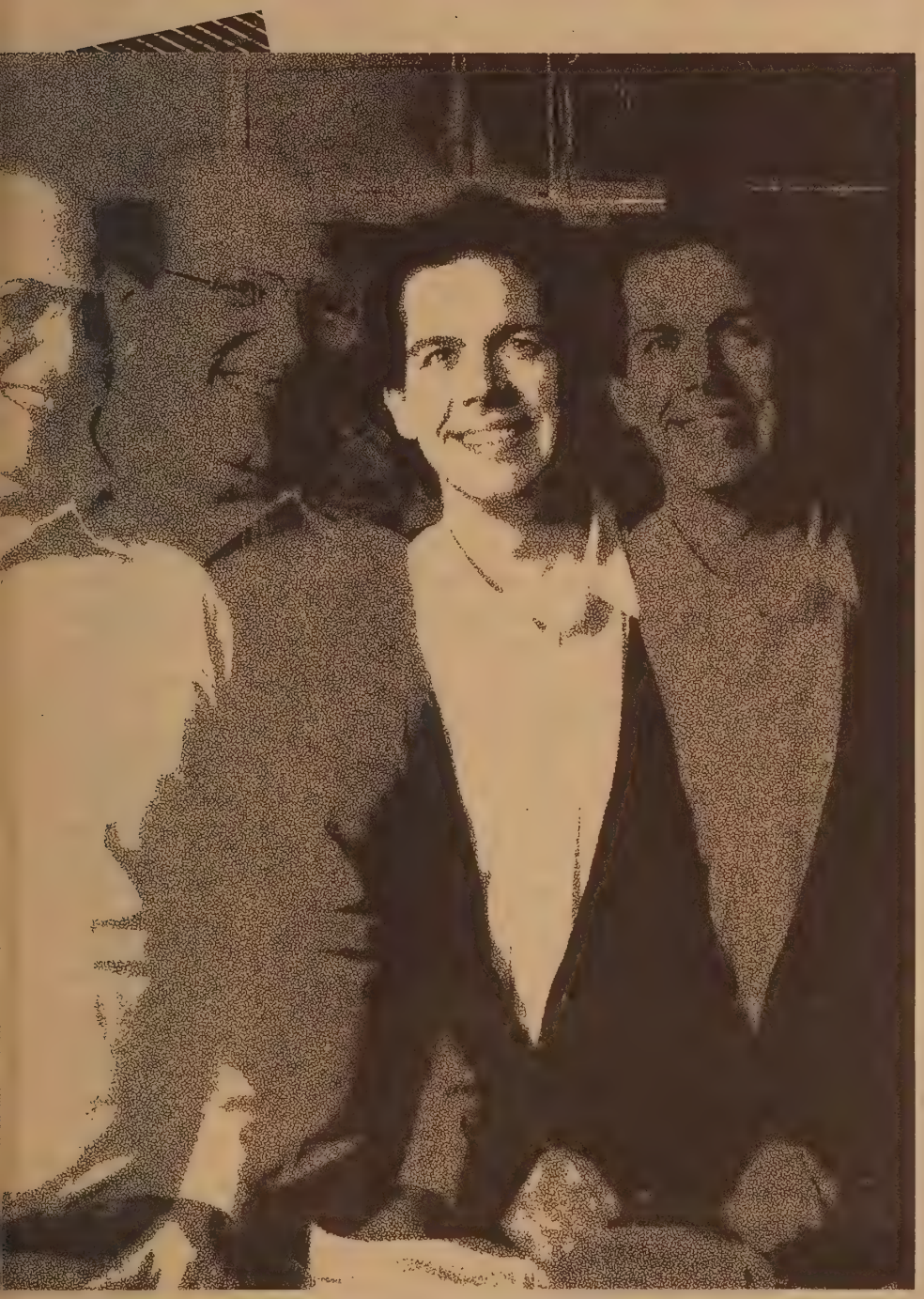
MacroMind Takes Presentations Further

By Mary Eisenhart



Marc Canter (l) and John Scull—masterminding the multimedia revolution
PHOTOS: MICHAEL JAY

Back in 1981, an event took place that was to have far-reaching effects on the personal computer industry. Marc Canter went to his first SIGGRAPH.

"I saw these incredible visual images," he recalls from the company's spiffy new South of Market digs in San Francisco, "and the soundtrack was a scratchy recording. And then I would go to these audio shows, where people would literally sit in a black room, turn off the lights, and everyone would fall asleep while they're listening to this electronic music. I thought, 'I need to pull these two industries together!'"

This was the heyday of computer-generated video games, and Canter, coming from the entertainment biz and working for Bally at the time, thought he saw an opportunity. So, in 1984, he founded a company called MacroMind and set up shop in Chicago.

"We started MacroMind with one of the world's best programmers," he says, "and one of the world's best artists, and I thought I was pretty good at music. So we were like this elite software rock 'n' roll band. We thought that we would just develop this code, and then we would have all these publishers publish it. In fact, we were represented by the William Morris Agency, this big talent agency. It was like, 'Yeah! creative people can make money at this stuff!'

"That was the illusion we started on."

The original plan was to create development tools for developers of video games. Alas, just as MacroMind was gearing up, the bottom fell out of the video game industry. However, in the interim Canter discovered the Macintosh.

"What we needed was a computer that had a standard graphics model and good sound, because we were looking for a multimedia platform even back then, because we wanted to do all these great video games. The Commodore 64 had hardware sprites, it had color, it had good sound, but didn't have a viable, stable operating

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system, and it had a limited memory space. There was just a number of problems.

"A 128 K Mac had twice as much memory as a Commodore 64, so we thought 'Wow!' The Mac to us was the first computer that had the most amount of pixels, 512 X 342. That was, again, 'Wow!' The graphic user interface was *not* why we chose the Mac. That was kind of like the third or fourth thing that we got, and only when we started realizing all these things we could do with a Mac did we really become a 'Mac company.' Before, we were this multimedia video game development company that happened to be using a Mac."

Pursuing their initial vision, the programmers at MacroMind conceived a product called *SoundVision*, which would integrate professional-level music and animation capabilities. *SoundVision* is still vaporware, partly because when its developers showed it to publishers, they were unanimously advised to split it into two products. Which they did, creating *MusicWorks* and *VideoWorks*, which were published in 1984 and 1985 by Hayden Software.

Shortly thereafter Canter had another pivotal experience.

"After the original *VideoWorks* was shipped—it was shipped for $100 as a cartoon-type toy—this engineer from Dupont comes up to me and shows me this animation of synthetic fiber molecules spinning around and forming a helix. It's like 'Whoa!' Suddenly I'm realizing that this stuff is so much more applicable, *way* beyond the videogame world; our sights were just way too small in those days."

However, the road to multimedia nirvana was strewn with obstacles. In 1985 the Mac industry was in serious trouble. Hayden, the publisher of *VideoWorks* and *MusicWorks*, went out of business, and a couple of other MacroMind projects with other publishers came to nothing. Salvation arrived, however, in the form of Steve Jobs.

"Right in the middle there in '85," Canter remembers, "Steve Jobs and Apple had asked us to take our animation kernel, which is inside of our animation program, and spin it off as a standalone player. We created what's called an authoring system around that player, so you would use the authoring system, which is a superset of *VideoWorks*, with a little programming language, to build in interactive code into this document. And the player would both play back that document and interpret the code. We call that the Tour Engine, and starting in January of 1986, every single Macintosh that ships ships with a training disk that shows you how to use the Macintosh. That was created with our Tour Engine, our technology. We entered into a joint development with Apple, so through '86 we developed this authoring system, which is called *VideoWorks Interactive*.

"Well, it turned out that this *VideoWorks Interactive* product was so hot, and *VideoWorks* itself was so hot, that there were many companies who were willing to pay us to use our product to create these interactive training disks. They were also hiring us as a production service to use the product—this is Microsoft, Ashton-Tate, Aldus, there's a list of 30, 40, 50 of 'em now."

By this time, bad experiences with publishers had convinced Canter that his initial strategy was flawed. "The experience had taught us that this whole illusion of a software rock 'n' roll band was bullshit, that you have to publish the product yourself, because no one understands the product better than ourselves." So in 1986 they published a game called *MazeWars*, and in 1987 the new, improved *VideoWorks II*.

Which coincided neatly with the advent of the Mac II and lots of new color software, much of which had *VideoWorks*-based demos and tutorials. "We were doing all these demos for Apple—it was the first time anyone ever saw color on the Macintosh. We're very much associated with the Mac II," says Canter.

Prosperity, however, brought some new problems, not the least of which, as many developers had discovered, was that it's a real problem for Mac developers to maintain the necessary relationships with Apple long-distance.

"For years," explains Canter, "whenever people would ask me 'Why do you live in Chicago?' I would give them this rap, 'Well, you know, if I lived in California I would write software for Andy Hertzfeld and Bill Atkinson. I'd write software for my peers, because these are the people I hang out with. And every time I'd go to the grocery store or the restaurant, I'd have to be careful of what I'm talking about, because who knows who's sitting next to me? You go to Chicago, I've got cabdrivers and waitresses, which are my target audience, and I can say anything I want at any time.' It's very important for us to evolve the aesthetics of the company as writing software for normal people."

However, other circumstances intervened, and Canter became convinced that the impact of multimedia, driven by the Mac II, was going to be as great as that of desktop publishing. Maybe greater. "Desktop publishing showed that there's an ability for one single application market to put a company into business or many

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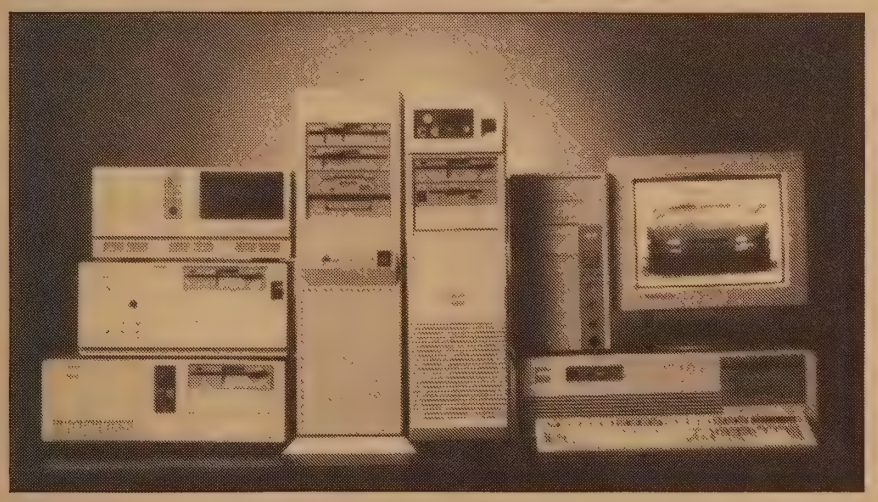

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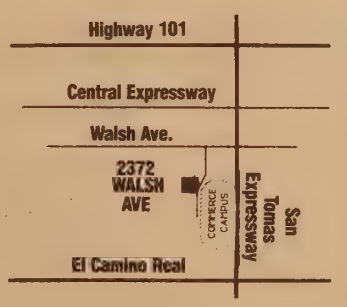

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companies into business; then there was desktop presentation, which showed that people want to do presentations simply, but maybe slides weren't really where it was at. This is all coalescing around the Mac II, and suddenly people started to realize 'Hey, what MacroMind and VideoWorks and Marc Canter's been doing for years is really where it's all headed.'"

So suddenly Canter found himself deluged with offers to buy his company, and discovered that selling MacroMind wasn't really what he wanted to do. "What I *really* wanted to do was get some VC money or get someone to invest, so I can develop the products I want to develop, get an executive in here who can lead the company so I can go off and make products. The point was, I'm not a marketing guy, and I'm the president of the company, so that's a problem. I mis-priced *VideoWorks II*. I sold it for $195; they bought it for about $112 from MacConnection.

"We felt as though 1989 would be the last year of the window of opportunity for us to really jump in in a leadership position—before it would explode even more and Microsoft and Borland and Ashton-Tate and Lotus would jump in," he says. "And then suddenly the next tier after that would be Robert Maxwell, Rupert Murdoch, Ted Turner, Time-Warner, CBS-Sony, I mean, everyone's going to jump into this thing."

Canter was sufficiently persuasive about the brilliant future of MacroMind that he attracted substantial investment from venture capitalists, first from Cole Gilburne and later from Kleiner Perkins Caufield and Byers. Part of the VC agreement involved moving the company from Chicago to the Bay Area, and also the hiring of a new chief executive.

The eventual choice for president and CEO was John Scull, who'd been on the original Mac team at Apple and spearheaded the company's desktop publishing campaign. "We think this is sort of a dynamic duo with the two of us," explains Scull. "I've been fascinated by how you use computers for more than just number-crunching, how they should be a tool to help people communicate ideas. I've been fascinated by multimedia, so I spent all last year looking at it; I did a special project for the exec staff at Apple, trying to figure out what Apple ought to do, what the opportunity was.

"I had known Marc for a while. We hit it off real well. He seemed to have a really good complement to my skills, and vice versa. I enjoy marketing and putting together a business, and kind of turning this into a significant opportunity to impact the world. And that's what he wanted to do through products. And so the mesh, the yin and yang, really seemed to work. So we decided, what the hell, we'd try it.

Marc Canter: "When people think 'What's multimedia, what can it do for me today?", it's hard to differentiate the science fiction of the future and the reality of the present. But there are a lot of things people are doing today with multimedia that save them money, that are more efficient, more productive, and a better communication medium."

Says Canter, Founder and Chairman of the company's new incarnation, "John's been developing our marketing, developing our sales, getting the company out here. My job is to talk about all the new programmers I've hired, all the great products we're working on, all the great things we're trying to do. I'm still kind of like the spokesman—the guy who goes up and gives speeches. I've got to fly down to LA tonight, did BMUG last night, I'm running around like a nut..."

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And in the midst of all this, MacroMind took advantage of the recent Hypermedia Expo in San Francisco to announce all-new versions of its products: *MacroMind Director*, an enhanced version of *VideoWorks II*, and *MacroMind Director Interactive*, an extension of Director, which allows developers to easily create interactive applications. "We hope that people will remember when Microsoft went from *Multiplan* to *Excel*," says Canter. "It's the same sort of thing. It's better, it's easier to use, it's more powerful, able to leap tall buildings in a single bound...."

When we visited MacroMind's spacious new headquarters recently, Scull referred to the Mac II as technology with which "you can do real multimedia today." Which led to an extended discussion of multimedia, what it's good for, and where it's all headed.

Would you care to define what "real multimedia" is?

John Scull: Sure. We basically consider it to be multimedia computing, which is the hardware and systems software, the platform that allows you to work with text, graphics, animation, audio, and video. You have to be able to work with those five media types, and, in our case, to help people communicate using a new medium. We consider this to be a new medium.

We don't consider it to be a market, we don't consider it to be even an application. We see multimedia to be this third wave of computing. The first wave being the kind of text-oriented Apple II, that was good for doing spreadsheets, databases, and word processing. The second platform being the early Macintosh, that now not only did text but also added graphics. WYSIWYG allowed people to do, beside spreadsheets, databases, and word processing, they could also do desktop publishing. Which was new, it was exciting, it was great, rah-rah-rah...

Canter: It could not have been done without the proper platform.

Scull: You needed that platform. And now we see the Macintosh is really maturing, especially the II family. It now has the power, the expandability, the flexibility to be able to work with text and graphics, it's got the processing power to do really good animation, it's got really good sound, and has expandability to work with video in and video out. So now you finally have a really good multimedia platform that's available to the masses.

Canter: When the Mac II replaces the equipment that's inside a video studio, and when you use this stuff for the purpose of putting it onto video tape, we define that as desktop video. Really, the only difference between this and multimedia presentations is that multimedia presentations stay on the screen, they don't go into tape, and they're interactive. Whereas desktop video is for the purpose of generating videotape.

What have been the obstacles up to this point that made it unavailable? What does the Mac II particularly change?

Scull: The hardware and system software. You have great color, the sound's improved, you have slots so that you can have cards to be able to digitizing images in or video out.

Canter: Or video in a window.

Scull: Video in a window for some of the advanced capabilities. You're just now starting to have a much more robust environment. Yes, our products work on a Mac Plus and an SE, with only one meg, and you can do some pretty neat things with it. But we consider the Mac II family to be what most people would consider the best multimedia platform today.

What do you have to say to those no-nonsense business types who would say, "Well, this is a very interesting toy, but what good is it?"

Canter: Let me say one thing to answer that. We just started off by being very careful in defining multimedia. The reason why is because it's

John Scull: "The number-one thing people want in their business life tends to be some kind of control. If you look at it, why do people adopt new technology? We think it's because they're torn between two lousy alternatives."

the buzzword du jour nowadays, and everyone wants to see it as a fad—and you know the way fads work, you associate the word, you put the word "desktop" around there, and...

Now what we do is we say, "Okay, multimedia is a platform." With desktop publishing, desktop publishing came in and replaced something called typesetting. That's basically what it did—it gave us a few

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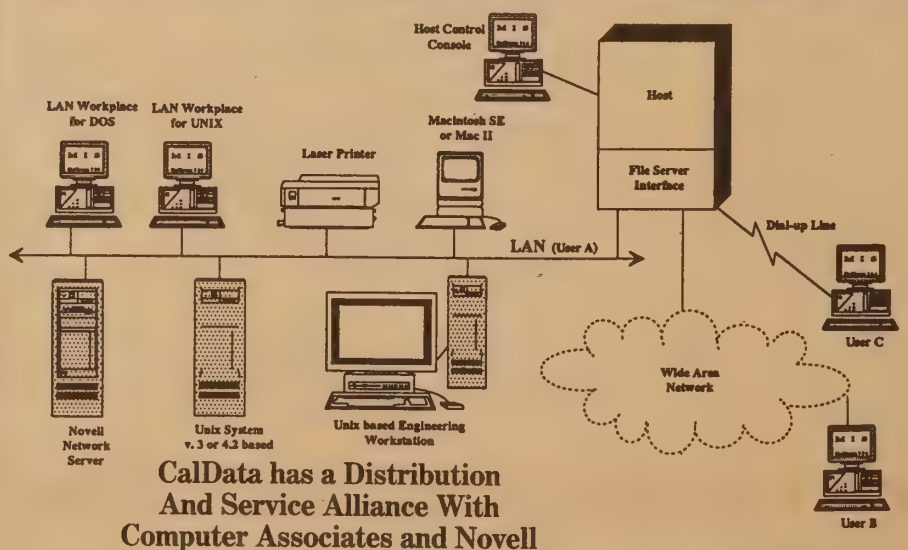

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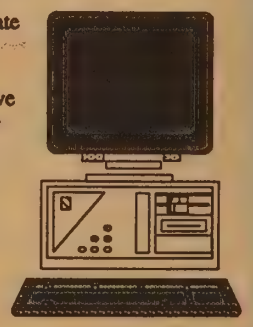

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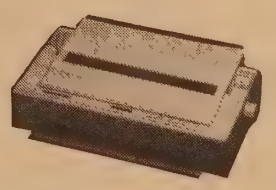

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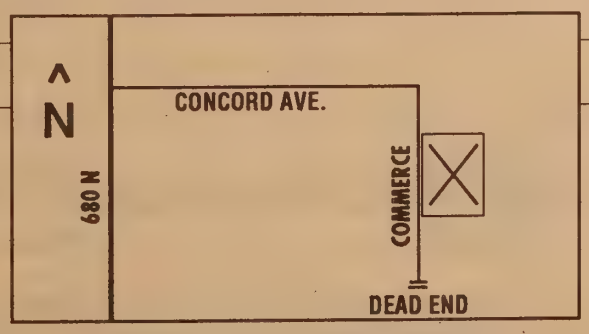

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extra things, but it's basically fulfilled its promise.

Now with multimedia, it's coming in, and there are a number of markets right now. Multimedia presentations, learning, visualization, and desktop video. I think the key point here, why there's such confusion, is that those are markets that replace something that people are doing today.

But multimedia is much more of an open-ended type thing. Yeah, it's these markets today, it's Jaron Lanier [virtual reality pioneer of VPL in Redwood City, architects of computer-generated environments where devices like the Dataglove allow people to move and interact in cyberspace] and his wacky gloves and stuff in the virtual reality of tomorrow, and it's the Knowledge Navigator in 10-20 years from now, and it's the agents in AI stuff in 30 years from now. It's all those things, because it's the platform that you sit on top of.

So when people think "What's multimedia, what can it do for me today?", it's hard to differentiate the science fiction of the future and the reality of the present. But there are a lot of things people are doing today with multimedia, in fact have been doing for years, that save them money, that are more efficient, more productive, and a better communication medium.

There's so much overload in society today, there's all this confusion—just when everyone figures out how to do slide shows, now there's hundreds of slide shows. Now you need to do something that's better than a slide show.

Scull: People basically have two major problems: they're either trying to sell an idea, to persuade somebody, or they're competing with a lot of other ways that people are trying to communicate for your mindshare. And so they have to figure out a way to do it in a much more effective, higher-bandwidth fashion.

Or they have some idea that needs to be communicated so that you can understand it. It may be some abstract or some complex process that you're trying to communicate.

Traditional media in both cases aren't good enough. So we believe that a new communication medium is needed. That's the essence of what we're trying to solve. What you try to do is really focus on where you can add value. So we as a company are focused exclusively on taking advantage of multimedia computing to help create this new communication medium.

Canter: The key thing is if you want your message to get across, you want to be better than the slide show. You need dancing girls, right?

Scull: We're seeing everything from the engineers and scientists doing it, all the way down to manufacturing stuff, all the way down to medical. Oftentimes it's in almost a learning environment, where they're trying to explain a rather abstract concept. This is a major problem in our society, training people and getting people up to date on new products, new ideas, new skills.

Who are the people and why are they using this stuff? The people we're finding that are using our products basically are professional users, or hobbyists, but in general it tends to be a very professional crowd. We break them into three major categories: the first is communication professionals, people like corporate creative service departments, ad agencies, cable tv—people whose job is to help communicate an idea. Communication professionals—there's lots of 'em, and needless to say that's a real stronghold for the Macintosh.

The second group is learning professionals, all the training people, all the professors, training departments, and things like that.

Technical professionals are the next group, engineers, scientists, medical, manufacturing people.

Before this, the work of simulations and conceptualizations had to be done on workstations. And what we're seeing [with multimedia on the Mac II] is that people are able to do conceptualization of their ideas—to get approval, to do what-if, just at the concept stage—and then later they can go to the CAD/CAM stage when they're trying to produce something. It's the equivalent of doing storyboards for an ad, or for some other type of work that you're doing.

You don't necessarily need a quarter-million dollars' worth of hardware to do storyboards.

Scull: Yeah. Why do that? Because normally you want to create it and say, "You're the client," or "You're the boss—do you like it?" Before you go spend $100,000 doing it."

Canter: The other thing is that with expensive hard-to-use equipment, you have to be a programmer or a scientist. In that manufacturing situation, the guy who comes up with the idea, if he's not the guy who's doing it, very often there's a big blowup. That's part of why we named our product *Director*, because it kind of turns you into the person who does everything.

Scull: It gives you control. The number-one thing people want in their business life tends to be some kind of control, I think.

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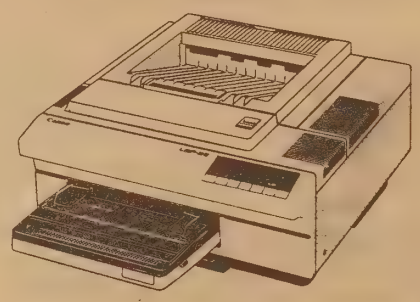

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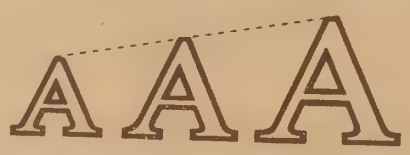

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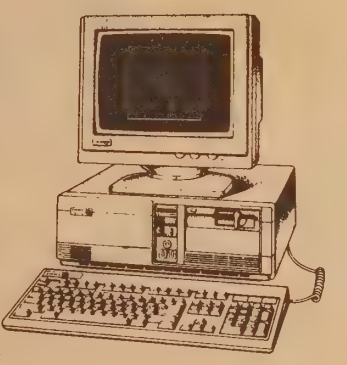

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If you look at it, why do people adopt new technology? We think it's because they're torn between two lousy alternatives. If you're trying to communicate an idea, the low-cost alternative is handouts and overheads and graphs and stuff. The problem with the low-cost alternatives is that they're just not good enough. They're not compelling. It's tough to convey a complex idea. They're tedious and lousy.

Or you could spend big bucks, and you can go get outside services, outside equipment, all this expensive video production. The problem with that is, no control. You're dependent on someone else. You don't do what-if. It costs too much, and you're always at the mercy of someone else's deadline.

Now wouldn't it be neat if something had this kind of [high-end] quality at this kind of [low-end] cost? Now you've got that impact that you're looking for, but it's under your control. Creative control, budget control, time control. That's why people want this stuff.

Canter: You sit at home, and you work on it till it's just right. And then you show it. You're not under this $500-an-hour-omigod-I've-got-to-finish-something-in-four-hours-or-else-I'm-screwed.

Scull: People make all kinds of compromises [using high-end equipment], all kinds of tradeoffs, they don't try things, they don't test things, they don't experiment...

Canter: They aren't creative!

How accessible is this tool, really, to your basic business guy who wants to do a presentation?

Scull: We're trying to make it so it's easy enough for people, a low floor so you can get on board, and then have this really high ceiling so even sophisticated people, real producers and stuff like that, can take it all the way. So you don't hit walls for a long time.

Canter: Nobody complains if *PageMaker*'s hard to use—doing rubber cement and stuff is pretty hard, and *PageMaker*'s a lot easier. For anyone who's done animation, it's the easiest thing in the world; but the problem is that there's people sitting down who have never done animation, and consequently they think "Oh, this is a hard program to use." Which of course it's not.

Scull: What we believe is, if you look at that kind of marketplace, that there's the high end, there's this group we call the industrial producer, and then there's the general office or the casual user. In spreadsheets, where did *VisiCalc* first get adopted? What category of people? It wasn't the real, real high-end folks, it was the financial analysts and the accountants. Nowadays secretaries and sales and marketing managers use it, but it started off as a financial analyst's tool or accounting tool.

Desktop publishing—where did it start? Graphic designers and publishers. Not the high end, not *Time* magazine, it started right here [in the middle]. Nowadays secretaries and marketing departments are laying out newsletters and things like that. But the computer and the software's getting more sophisticated; now you're doing four-color separations, people are doing magazines with it, newspapers are starting to do it, so it's moving up.

Guess where multimedia's starting. It's no different, starting with those professionals that have a need, where this tool is an important part of their business. That's where it's going to start. It's not the ones where it's their lifeline, like someone in Hollywood—those guys will spend half a million dollars, $2 million, to do this. That's not where we're at yet. We're close—in two to three years, I *guarantee* you we'll be there, just like four years later we have four-color separations in desktop publishing. We're going to do the same thing.

Canter: People make money using our product. That is what they do. The people who are making slide shows are the perfect people to come over initially. And in the low-end world, that's where *HyperCard* and *SuperCard* are.

Scull: I contend there's not yet anything down here at the low end. A lot of things still need to happen. The hardware still needs to get a little more plug-and-play, the distribution channels still have to get more appreciative of the opportunity, general market awareness has got to be much broader.

So there's a lot of things. Things tend to migrate down as the whole infrastructure rises. This is no different. This will follow evolutionary trends just like any other market, any other opportunity, whether it was *VisiCalc* or desktop publishing. As the hardware gets easier and people understand it, as there's more training and infrastructure and the dealers know about it, it will move down and people will use it. (MacroMind, 410 Townsend, Suite 408, San Francisco, CA 94107, 415/442-0200.) ■

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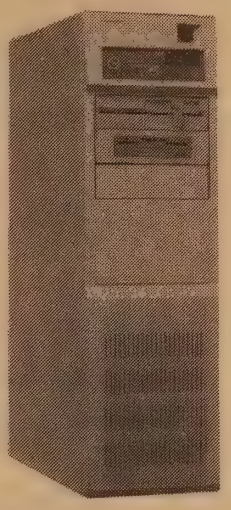

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- 6/12 MHz 0 Wait
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286 16 MHz 0 Wait

- 512K RAM Expandable to 4 MB
- 8/16 MHz Switchable
- Landmark=20.5
- Chip & Technology Neat Chip Set
- Shadow RAM for fast BIOS Access
- EMS LIM 4.0
- Page Interleaved Memory Controller
- 1.2 MB Teac Floppy Drive
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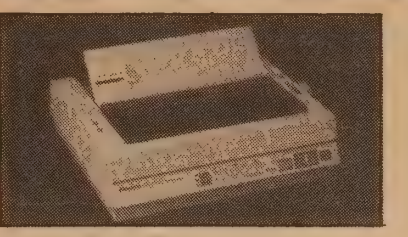

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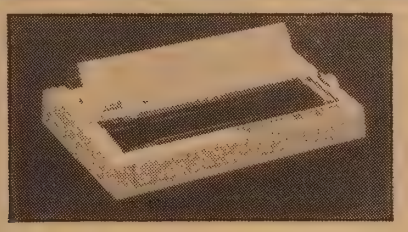

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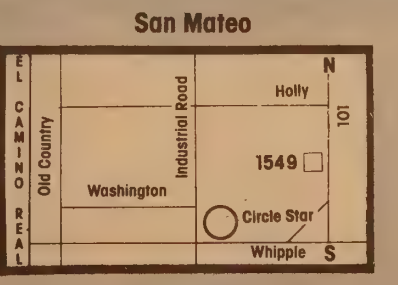
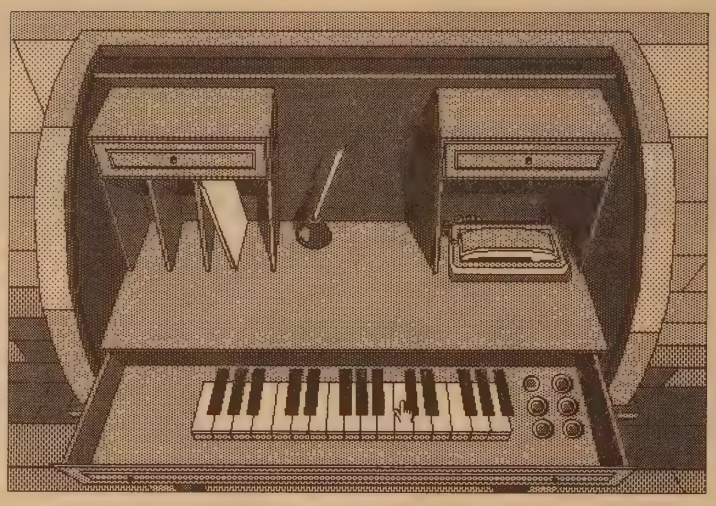


The Manhole On CD-ROM

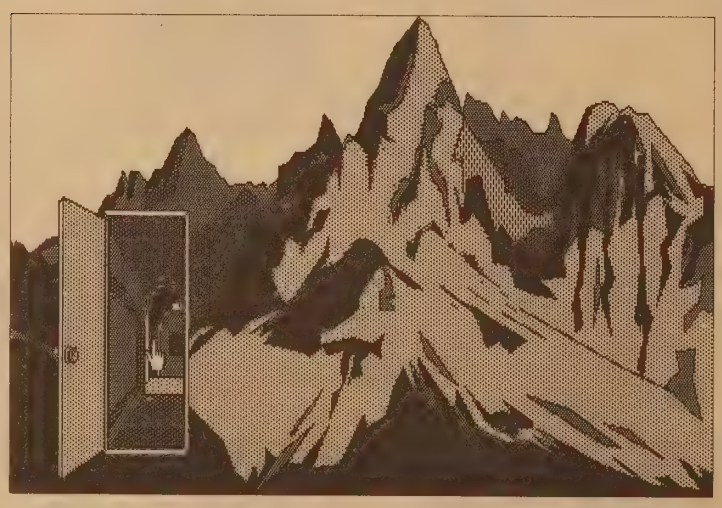
Activision's HyperCard-Based Adventure In A New Medium

By Jonathan Evelegh



A Virtual Keyboard: You can play this keyboard in six different voices. Or read the notepad in the cubbyhole on the left. Or use the phone.

Magic Beanstalk & Fireplug: You can up or down the beanstalk or explore inside the beanstalk.



Open Mountain Door: Close the door and the volcano will erupt, the aliens will land, and things will never be the same. Go through the door and you'll be in a labyrinth.

According to its packaging, *The Manhole,* Activision's first CD-ROM offering is a "Fantasy Exploration For Children Of All Ages." That seems like a fair enough brief description; I wouldn't call it a game, because there is no scorekeeping or rivalry with an opponent or the computer. Its main purpose and benefit seems to be casual enjoyment.

Perhaps the closest comparison would be to a maze (and you do encounter a maze in your explorations), but instead of being confined between walls or hedges, you are free to roam through a variety of fantastical and surreal landscapes, buildings, and other familiar-looking objects, such as fireplugs, VCRs, chess pieces, and pictures on the wall, which often serve as buttons that cause something to happen. The big difference from a maze is the ease of exit and the absence of a correct path through it.

Manhole could also be compared to an interactive storybook or comic strip, with the user taking the part of the protagonist, and constructed with a series of events rather than a twisted turning plot—although there are plenty of twists and turns in the routes you can take through *Manhole.*

CD-ROM: Boon Or Bete Noire?

This imaginary environment is available either on several floppy disks or on a single CD-ROM. The differences between the contents of the two packages serve as a reasonable demonstration of some pros and cons of the two media.

Basically, there are more *Manhole* adventures on the CD-ROM, for the obvious reason that you do not have to eat up your own bytes to enjoy this slightly extravagant use of electronic space. With the CD-ROM you can also play most of the sounds and music directly as standard CD audio.

However, the hyperactive will probably find the speed of the CD-ROM frustating. You're advised that you need at least 800 K of RAM for *Manhole* to run smoothly. This is not an easy condition to meet, and even with many system files and all desk accessories removed, except the Control Panel and CD Remote, the sound was not always in sync with the visuals and often did not play continuously. On the other hand, the speed should not be judged too harshly, as the whole point of *Manhole* is to have a little relaxing fun, not to get frantic with the number crunching or information accessing.

In general, I feel that CD-ROM is suffering from over-enthusiastic and premature hype, particularly as regards its sound handling capabilities. It is going to have to overcome some negative reactions from those who expect either Hollywood production values or hard disk speeds. When you consider the potentially large amounts of data to search for and the early stage of development we are realistically still in, things aren't too bad. At this stage, *Manhole* seems to me to be a fairly successful use of CD-ROM.

The CD-ROM version of *Manhole* consists of nine main *HyperCard* stacks, ranging in size from a beefy 14,177 K, containing 162 cards, down to a puny 1,434 K, with a mere 23 cards. Another stack is 2,100 K and only has 10 cards. The apparent discrepancy is due to the sizes of the different sound resources attached to the stacks. Surprisingly, the stacks are not compacted, which might have marginally improved performance. The CD also contains a copy of *HyperCard* version1.2.2, a home card (of course), plus an Installer stack to put a button on your home card, and the usual Teach Text and Read Me files. This takes up a total of 53 megs on the CD, which considering a possible maximum of 550 megs still leaves plenty of headroom. Some of that headroom is taken up with the 16 tracks of CD audio, but the sound totals only 17 minutes 40 secs, so the CD is still only about half full. From my experience with the *Electronic Whole Earth Catalog* CD-ROM, and looking at *Manhole,* I can confidently say it takes a lot to fill up a CD-ROM.

One of the things we learned from producing the *Electronic Whole Earth*

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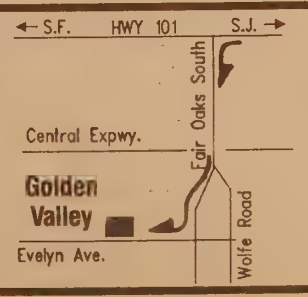


Catalog was that nothing is even remotely as simple as it seems at first when you're designing for CD-ROM. This is well demonstrated by the Installer stack that comes with *Manhole*. It thinks it installs the Manhole button on the CD-ROM's own home card. Obviously that card already *has* that button, because it's on a read-only disk, and with a little further thought it seems unlikely that anyone is going to throw out their own carefully customized home card and replace it with the standard one from the CD-ROM.

There are two things you can do. One is to open the CD-ROM's home card, call up the message box, type "set the UserLevel to 5", copy the button, and then paste it onto your own home card. Alternatively, you have to copy the Installer stack to your hard disk, click the Installer button, and then teach it the path. But if you follow the Read Me instructions, all that happens is that you get a dialog box gleefully announcing "The button is installed on your home card!" when nothing has actually happened!

The other irritating feature you'll notice early on is the dialog box that appears whenever you try to open anything on the CD-ROM warning you that you will not be able to save anything. We know, we know. Despite what I said about the speed above, CD-ROM is slow enough already and doesn't need to add to the aggravation! However, this is due to the drive software, not *Manhole*.

Into The Manhole

Once past these initial peeves, the Manhole opens up for exploration. Birrell Walsh's description of it as an "interactive cartoon world" (*MicroTimes*, Mid-December 1988) is as accurate a description as is needed here. But how is it done?

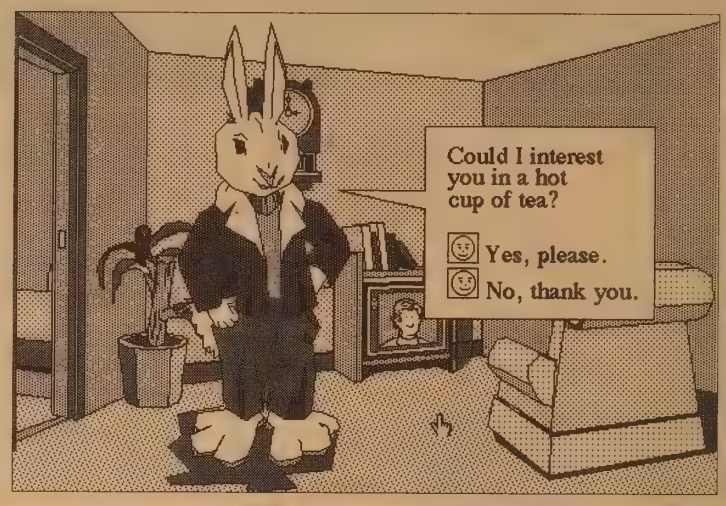
What we're basically dealing with are graphic *HyperCard* screens with between one and eight transparent buttons of various sizes, which will take you to the next card or a sequence of cards or maybe to another stack. Many of the cards share backgrounds and background buttons when the graphic or the function is the same. Some of the animation, such as the sloshing of tea in a cup, is achieved by simply running through three or four cards in a cycle.

Some of these sequences, such as a boat ride in an underground brick-walled maze, can also become somewhat tedious, as you appear unable to get out and into a more congenial environment. There is an attempt to always give you an escape hatch, in this case a small rectangular button looking like a close box on the lower left of the screen, but this is easy to overlook and you emerge somewhat disoriented. It's easy to end up going around in circles, and the accompanying music becomes extremely annoying. On the other hand, this is an interesting demonstration of the real power of the *Manhole* world. It just isn't the sort of experience I necessarily want with a computer. (It happens enough anyway!)

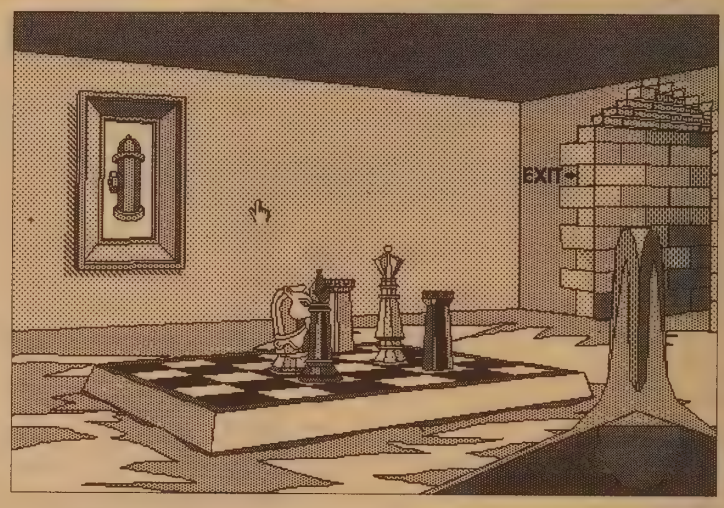
CD-ROM is suffering from over-enthusiastic and premature hype, particularly as regards its sound handling capabilities. It is going to have to overcome some negative reactions from those who expect either Hollywood production values or hard disk speeds.

Many of the buttons trigger sounds—short spoken sentences, dramatic sound effects, and rather long pieces that accompany a sequence of screens. Some of these are resources included in the stack, and these work very well, but the longer ones, as far as I can unravel the inner workings, are from the audio tracks also on the CD disk. These generally suffer from the problems of synchronization and cutting out noted above. I am not at all convinced that this is all due to the possible shortage of memory. Sound handling is a complex problem, and I suspect that we really need some advances in this area from Apple before we're going to hear smooth uninterrupted sounds.

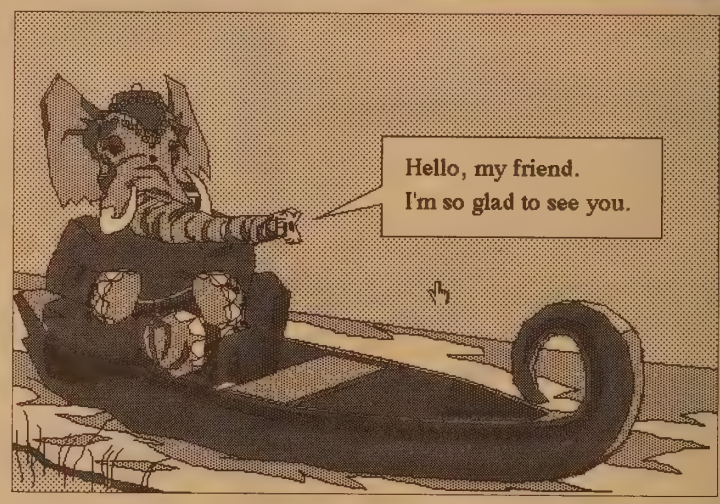
Regardless of the technicalities, *Manhole* is fun and a unique use for *HyperCard* and CD-ROM. I found it a very amusing way to spend quite a number of hours, and I suspect there are parts of it I still haven't seen. If you have a CD-ROM drive—or can spare the space on your hard disk—I recommend it heartily. ■



Tea With The Rabbit: If you don't want tea, he'll offer you milk. You can turn the TV off or leave through the door.



The Floating Chess Game: You can leave through the exit—or try the fireplug on the wall.



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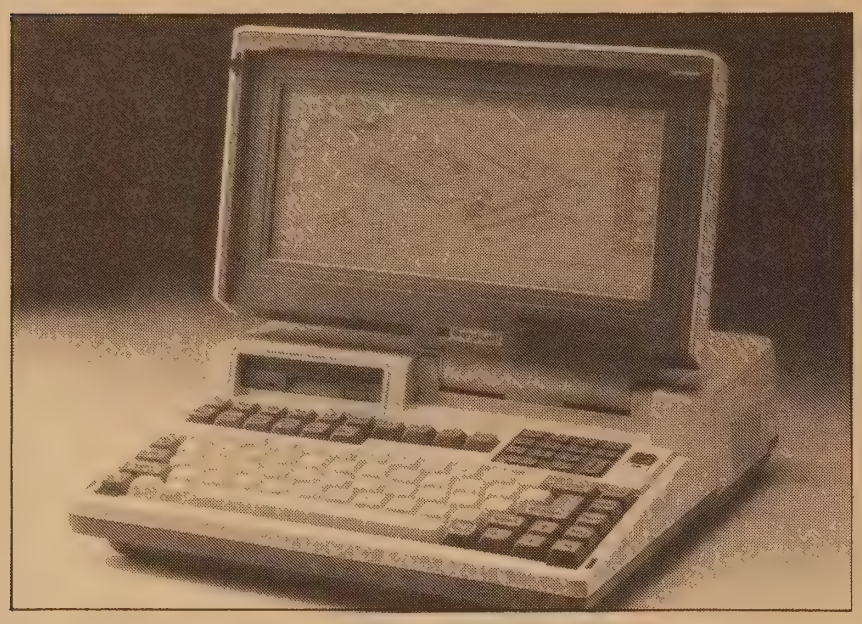

The Bondwell B300

By Ed Kahn

The Bondwell is the only computer I've seen that has a switch on the keyboard that allows you to turn off the hard drive. This is a good energy saving device. Furthermore, the Bondwell can be set up to turn off the hard drive automatically after a period of non-use.

In a market crowded with competing laptops, it is possible to get just about anything you want. You can choose from briefcase computers weighing as little as four pounds, all the way up to machines approaching the luggable sewing-machine-sized units of yesteryear. You can have hard disks or floppies, stripped-down units, or powerhouses approaching the capabilities of the most powerful desktop units.

With so many choices available, it is difficult to understand the appeal of some units. What market are the manufacturers targeting? An example of a machine that falls between the cracks for me is the current Bondwell entry.

It performs flawlessly, but these days that is not enough. A year or two back, I would have highly recommended the Bondwell B300, but with so many entries in the under-$3,000 class, a machine has to have something that really calls out. This unit, despite a number of fine features and a few unique twists, nevertheless falls short in a number of areas. If, however, you find a great buy in this unit, there is no reason to shy away if what you want is basic computing power.

The B300 is built around an 80286 processor, which means that it is a reasonably fast unit—9.8 on the Norton scale. It weighs in at 15 pounds and has a compact design. The 20 Mb hard disk is reasonably quiet. You are advised to run a disk parking utility at the end of a work session if you plan to move the computer. Most of the competition has a self-parking hard disk to avoid this inconvenience.

On the other hand, the Bondwell is the only computer I've seen that has a switch on the keyboard that allows you to turn off the hard drive. This is a good energy saving device. Furthermore, the Bondwell can be set up to turn off the hard drive automatically after a period of non-use. This feature is helpful when using the unit in the field—especially for applications where it is possible to work for fairly long periods without having to access the hard disk. If you leave the hard disk off and do a save, the disk is automatically awakened for completing the task. Afterwards you can manually touch the HD button, which tells the drive to go back to sleep.

Another unique feature of this unit is its battery program, which tells you how much charge is left in the battery. When you call up the battery program, you can also turn the hard disk automatic shutdown feature on or off, as well as the sound warning beeps. Bondwell's program stays up to date, even if you move back and forth between battery operation and AC power.

A similar program, *Battery Watch* ($39.95), is available from Traveling Software. While it is limited to keeping you up to date on your battery's condition if you use any portable on battery power most of the time, *Battery Watch* is a must. It will work on most battery-operated portables and save you lots of worry, as well as the inconvenience of running out of power at the wrong moment.

The Ni-Cad batteries in the B300 can power the computer for up to three hours of use, but this time will be significantly reduced depending upon how much you use the hard disk and the backlighting for the LCD. A switch on the side of the unit allows you to turn the backlighting off and on. In many lighting situations, there is no appreciable improvement from using the backlighting. In substandard lighting, however, the backlighting provides an extremely clear display. Many computers I have tested really are impossible to operate without backlighting, but the Bondwell is happily the exception. While the built-in display is a clear electroluminescent backlit screen, the computer offers only CGA compatibility when you connect to an external monitor. For some graphics this is OK, but for text, I can't work with CGA resolution for long.

One of the strong points of this computer is its attention to energy conservation, permitting you to use it on battery for a reasonable length of time. Although you can use the B300 for up to three hours on battery, it takes twelve hours for a full recharge. While this is not uncommon, it does limit your ability to use this machine exclusively as a battery-powered unit, as there are no provisions for changing batteries in the middle of a work session. The instruction manual does not discuss changing or replacing the batteries, but does advise against leaving the AC adapter connected to the computer all the time.

In general, the B300 has the features you want. The unit comes with 1 Mb of RAM and is expandable to 1.5 Mb. A built-in 1200 baud modem is standard. The modem works perfectly, but is half the speed of most of the built-in modems that are included in competing models. Furthermore, I rely heavily on a modem speaker, a feature this unit lacks. Fortunately, however, the modem does allow you to listen on a telephone handset to monitor the progress of the connection. The computer comes with a se-

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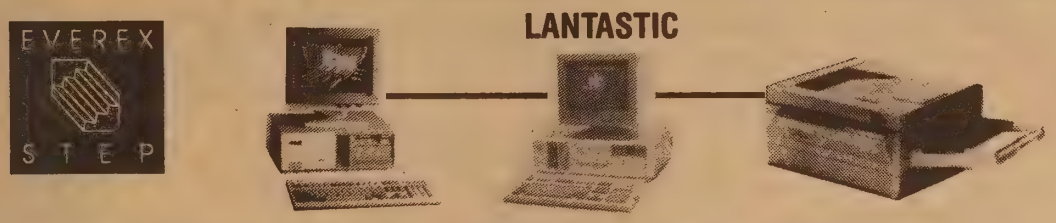

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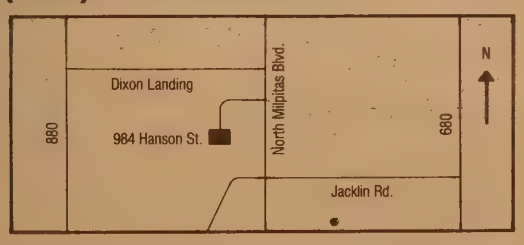

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rial port in addition to the modem. A switch on the side allows you to set the modem as COM1 and the serial port as COM2 or visa versa. This will allow you to accommodate any software that insists on the serial port or modem being COM1.

The keyboard of the B300 is complete and compact. The standard typing keys are in the expected places. The control key is located to the left of the A key. In the old days, I cursed computers that did not have the control key located here, but now I'm not so sure. Over the last year I have seen the wisdom of having the control key located on the bottom row, and in two places so it can be accessed with either the right or left hand. While I cannot really fault Bondwell for putting the control key where they have, it is becoming less and less common.

They have included a full numeric keypad, although it is made up of small keys. Nevertheless, I really appreciate it when laptops find some way of providing a separate numeric keypad. The more common practice—providing embedded keypads in which letter keys double for number keys when the NumLoc key is switched on—always leaves me wishing for an honest-to-goodness numeric pad that is always there. Bondwell provides this, as well as separate cursor control keys. In this respect, the keyboard wins high marks.

But the placement of some of the other keys feels awkward to me. The delete key, for instance, is located near the center of a row above the standard keyboard. And while I don't use function keys 11 and 12, a buyer should be aware that these keys are not provided.

My main objection to the keyboard, however, is that I have a hard time typing accurately on the unit. There is no question that this is very subjective, but some computers provide keyboards that I can really work well on for long periods of time, but the Bondwell is not one of them. This limitation is made worse by the absence of a port that will allow you to connect a keyboard of your choice. While I have no reason to expect computers to provide such an alternative, it is always a plus because the selection of a keyboard is bound to be subjective and the presence of this port offers a user the ability to select a favorite keyboard.

The design of the computer allows a fair amount of expansion. A 1.44 Mb 3.5" disk drive is included. A port on the back of the machine allows you to connect an additional drive—either 5.25" or 3.5". Bondwell does not sell these additional drives, but has wisely designed the system so anyone can easily add a generic drive. The connector will work with any IBM compatible free-standing drive. Bondwell has also designed the system so a user can install an 80287 math coprocessor. A carrying case comes with the B300.

When I began to review this unit, I phoned to ask for a listing of available options and their prices. I was told that there are no options—everything is either included or available from third party vendors. This is refreshing in that you can shop for competitive prices on the options you require.

The computer is ready to go when you get it. But there is a setup program that allows you to configure the system to suit your needs and accommodate any options you may install. The program is accessed by pressing Esc along with the Control and Alt keys. From within this program you can tell the system how many drives you have, how much memory is installed, and the time and date.

The Bondwell B300 comes with MS-DOS and GW-BASIC. In addition to the software and appropriate manuals, there is a user's manual, that has all of the information you will need to operate the computer. Although the manual is small, it does have an appendix that contains pinouts for all of the ports, as well as other technical information that might come in handy.

Although this is a portable computer, Bondwell forgot to build in a handle. While this does not affect the operation of the unit, it makes it awkward to carry it or even take it in and out of the carrying case. ■

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Resources:

Battery Watch $39.95
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Bondwell B300 $2,995.00
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A Pair Of Portable Printers

While the laptop market has filled to bursting with wonderful lightweight machines of every description and capability, the portable printer market has lagged behind. There have been lightweight units that were designed for portability and battery operation, but the marketplace has not been filled to overflowing. Nevertheless, there are several credible models now available.

Toshiba ExpressWriter301

The Toshiba ExpressWriter301 ($489) offers 24-dot letter quality printing in a compact four-pound package. The unit combines the dot matrix concept with thermal transfer to offer a quiet printer that works on any paper. Ink is supplied by a snap-in ribbon (two for $9.00). To date the ribbon comes only in black. The printer is powered by either the built-in rechargeable NiCad batteries or the supplied AC adapter, which also recharges the batteries. The printer will operate for about an hour on a full charge.

In many ways the ExpressWriter is an extremely versatile machine, offering five built-in fonts and both Toshiba and Epson LQ printer emulation. The printer will operate at either a high-speed mode of 60 characters per second or a standard mode of 42 cps. Like all Toshiba products, the 301 comes with excellent documentation and a worldwide one-year warranty. An optional carrying case ($39.00) is available.

I could be happy with this printer for most of my work except that it does not offer either a tractor or pin feed option. This limits the user to feeding in individual sheets of paper. While this may serve well for many users, those who need to be able to use formfeed paper will have to look elsewhere.

Kodak Diconix 150 Plus

The Kodak Diconix 150 Plus ($499.00) printer uses an ink jet technology to achieve its high print quality and nearly silent operation. It, too, works on any relatively smooth paper, although if you want truly fabulous results you should use the special ink jet paper that Kodak and other vendors sell. This printer is a reworking of the popular Diconix 150 and incorporates a number of enhancements that make it capable of serving as a primary as well as portable printer. It is silent and fast: 180 characters per second.

The printer is small in size as well as weight. At 3.1 pounds, it is easily transported. And while it can take standard size formfeed paper, it is also easy to feed in single sheets and even labels. In addition to the highest quality print, an operator control panel allows you to choose either near letter quality or draft quality. These different print qualities work at different speeds and use different amounts of ink.

The printer comes with both a comprehensive operator's guide and a detailed reference manual. Dip switches on the side determine whether the printer will operate in IBM or Epson emulation. In either case, it is easy to make this printer work with all software.

Ink cartridges cost $13.95 each, and a carrying case is available for $29.95. A one-year warranty comes with the printer. A parallel port makes it a literal snap to connect to most IBM compatible computers.

Resources:

ExpressWriter301 ($489.00)
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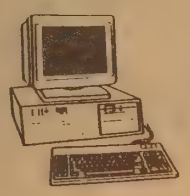

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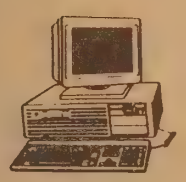

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Landmark = 58.5 SI = 45.9
128K CACHE with 66 MB HARD DISK

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Hi-Q TOWER 25 MHz 386 COMPLETE VGA SYSTEM
Landmark = 37.9 SI = 31.6
32K CACHE with 66 MB HARD DISK
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Landmark = 25 SI = 23
with 66 MB HARD DISK

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with 66 MB HARD DISK

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- *80387 Socket*
- *2 Serial, 1 Parallel, 1 Game Port*
- *Real Time Clock/CMOS Memory w/Battery Back-up*
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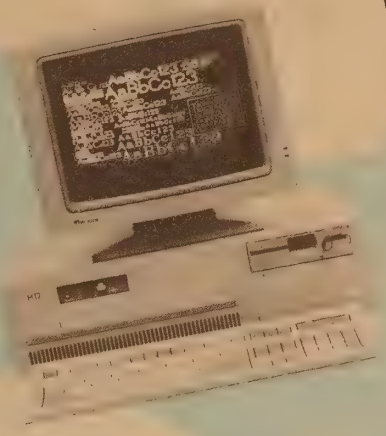
Landmark = 34.5 SI = 29.5
with 66 MB HARD DISK



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- Hercules Compatible Monographics Card
- 80387 Socket
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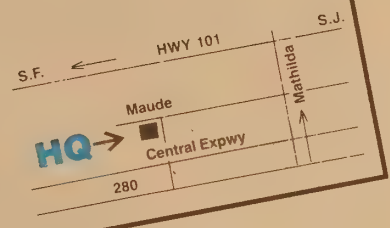
- 2 Serial, 1 Parallel, 1 Game Port
- Real Time Clock/CMOS Memory w/Battery Back-up
- 230W Power Supply & Quality Case Holds 5 Drives
- 101 Key Enhanced Keyboard
- 3.3 or 4.01 DOS included
- Supports – MSDOS, OS/2, PC-MOS/386, UNIX, XENIX, DR-DOS, Concurrent DOS 386



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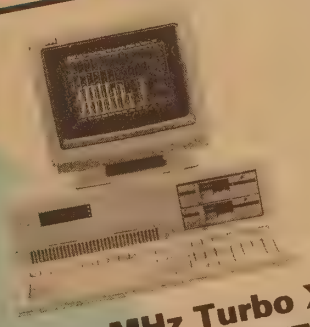

Hi-Q 10 MHz Turbo XT COMPLETE SYSTEM
Landmark = 15.9 SI = 13.4
with MONITOR

- 640K RAM On-board
- 2 - 360K Floppy Drives
- Floppy Drive Controller
- 12" Monochrome monitor
- Hercules Compatible Monographics Card w/printer port
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- 101 Key Enhanced Keyboard
- 3.3 DOS included

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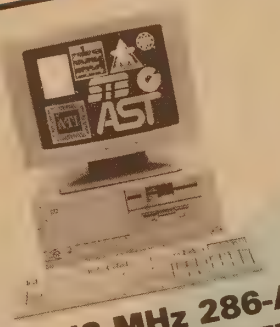

Hi-Q 12 MHz 286-AT COMPLETE SYSTEM
Landmark = 15.9 SI = 13.4
with MONITOR

- 640K RAM Expandable to 4 MB On-board
- 1.2 or 1.44 MB Floppy Drive
- 1:1 Interleave Hard/Floppy Disk Controller
- 12" Monochrome monitor
- Hercules Compatible Monographics Card w/printer port
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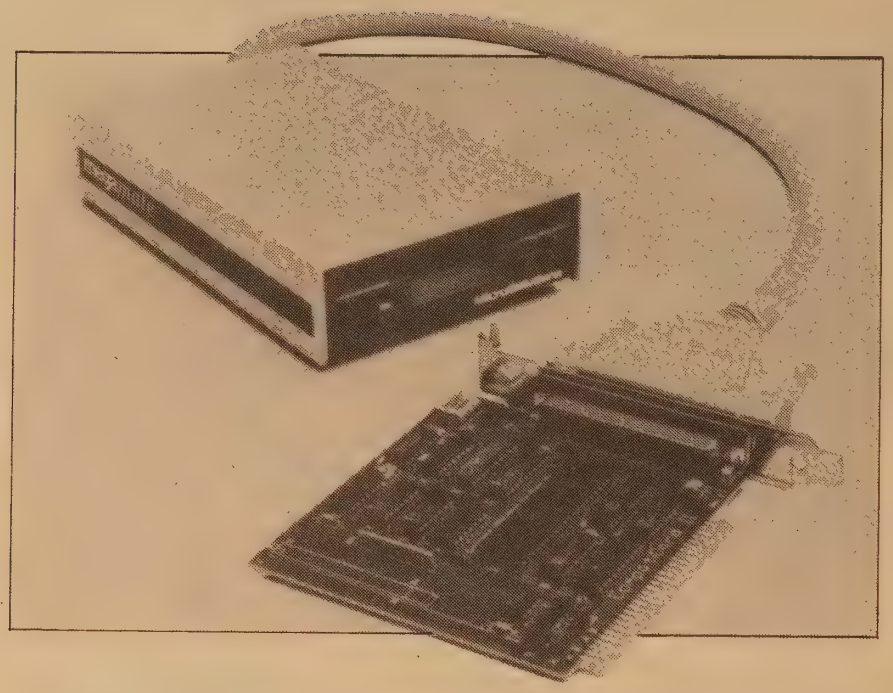
The Megamate External Disk Drive

3 1/2" Disk Capability Without A DOS Upgrade

By Robert D. Athey Jr. and Stewart Pugh



The really great thing about the Megamate software is that it only requires MS-DOS version 2 or higher, where the standard 3 1/2" drive support requires MS-DOS 3.2+ or OS/2.

Laptop computers are becoming ubiquitous; you see them on airplanes, at meetings, and carried on the city streets. For those of us who have been using 5 1/4" disks on our PCs, however, moving files between desktop and laptop machines poses a problem in that laptops use 3 1/2" disks.

Information transfer from the laptop to the desktop can be done by wire transfer (null modem) or by telephone links with standard modems, but it's a lot easier just to plug in the disk in a 3 1/2" drive. However, both the modem and the installed disk drive have associated hardware and software problems that cost time and money to solve; novices may find themselves needing to call in an expert.

Another great solution to the problem comes from MicroSolutions in the form of Megamate, an external 3 1/2" drive. The Megamate is a simple external drive that requires a half board installation inside the computer, an easy operation even for us novices. The board has a cable connector that sticks out the back of the computer; the disk drive cable snaps right in, with the disk drive sitting on the table next to the computer CPU.

MicroSolutions provides the software that tells the computer you have a new Megamate drive (Call it the "D:"); you can access the drive immediately for formatting new disks, and for storing and accessing data. You can have confidence in the MicroSolutions software; the same company publishes *Uniform*, the program that translates MS-DOS to CP/M and back, and *UniDOS*, the CP/M emulator for MS-DOS.

The Megamate will give you the standard 720 Kb format for the 3 1/2" disks, or the new PS/2 1.2 Mb format. (How far we've come from the 98 Kb 8" disks in just 10 years!) The really great thing about the Megamate software is that it only requires MS-DOS version 2 or higher, where the standard 3 1/2" drive support requires MS-DOS 3.2+ or OS/2. This means you can upgrade your file compatibility without getting the MS-DOS upgrades.

The fact that this device has a cable connection port out the back of the computer means that it can be carried from machine to machine, if you buy extra cards for installation into the CPUs. This allows you to use the Megamate as a portable expansion on several machines, and carry the disks (for data or installation) with you. That's good security, at much less cost than some of the "ruggedized" portable hard disks; you still have more information on fewer disks than the standard floppies. Great for backups, too.

Is the Megamate for you? There are some pros and cons. On the pro side:

1. It is small, quiet, compact and solidly well built.

2. It's very easy to install. You must open up the computer to install the half size board, but that's not a big deal.

3. It's good for machines you want to expand to the 3 1/2" format when no other room is available—e.g., an AT&T 6300 has room for only two half height devices, and any additional disk drives have to be external.

4. This can be a way to upgrade to the 3 1/2" inch disk format without having to buy a MS-DOS upgrade.

5. The Megamate floppy disk drive is slightly faster than our existing 360 Kb 5 1/4" inch floppy drives. (We used the *PC Magazine* drive characterization programs from the PC Labs BenchMark series. Results indicated that the Megamate drive was at least as fast as the 3 1/2" internal drives in a Zenith Z-181 laptop and faster than the 5 1/4" drives in several desktop machines we tested. We also found the Megamate drive noticeably quieter than the other drives.)

On the other hand, there are some drawbacks to the Megamate as well:

1. $350 is rather expensive for a floppy disk drive. An internal drive supported by the existing disk controller and installed by the user can cost about $150. Remember, though, that this approach may also require an MS-DOS upgrade that will add to the cost of the less expensive disk drive.

2. If the computer is a "tower" configuration (CPU set on its edge), there is no place to put the disk drive, as the 18-inch cable is too short.

3. Is there enough power on the PC bus to support the disk drive power drain without using the extra power plugs from the internal power supply?

We saw no sign of slowdowns or other power problems, but the question is valid. The original PC 65 watt power supply may not have enough oomph if there are many peripherals and cards already present.

4. The controller card does consume a slot on the PC motherboard. MicroSolutions mentions that the AT&T 6300 may have problems with this disk drive. The solution is to replace the DMA chip on the AT&T motherboard. Although this is not difficult, it is not a routine task for the novice. The Megamate floppy won't run on the Sanyo MBC 555, as this PC doesn't have card slots.

Who would want one or or need one? Would we recommend this product to clients?

We would recommend the MicroSolutions Megamate to those who have a basic fear of the inside of the machine; the simple installation procedure is easy enough for those who don't want to fiddle with disk drives, screwdrivers, plugs, and mysterious controller boards. For machines with all their disk drive slots already filled that still need to expand, this drive is a good solution. (Megamate external drive, $349. MicroSolutions Computer Products, 132 W. Lincoln Hwy., DeKalb, IL 60115, 815/756-3411.) ■

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OPTIMA AX25386
Standard Features:

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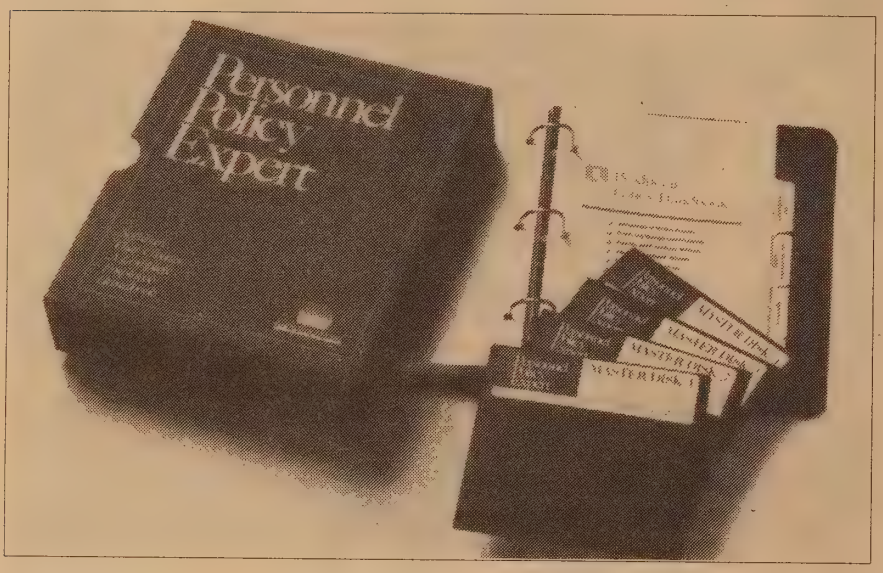
Personnel Policy Expert

Considering And Defining Your Employee Policies

By Woody Liswood

For many of us, microcomputers are useful tools to help us get our work done. I suspect that the most commonly used tool on a microcomputer is a word processor, followed by spreadsheets and database software.

However, another large area of microcomputer use is starting to mature: programs filling specific functions for specific industries or professions. A while back we reviewed *Legal Ease*, which provided multitudes of forms that you could use to help you run your life.



Personnel Policy Expert is also in that genre of program. It allows you to create a personnel handbook you can use with your employees. You don't need to spend hundreds or thousands of dollars hiring a Human Resource Consultant to do it for you, nor do you need to find someone with years of experience to head your Personnel Department just to get the handbook done.

On the other hand, if you *are* an experienced Human Resource Professional, you know what a pain it is to write, edit, and update the smallest of employee handbooks. And many times you wish that you had someone to discuss the options with when you consider creating or changing one of your policies. *Personnel Policy Expert* would help you in that way. If you just happen to be a high-priced Human Resource Consultant (or even a medium-priced one), then *Personnel Policy Expert* might just help you appear to have significantly more resources than you do, and allow you to create and maintain employee handbooks for your client companies in a very cost-effective and profitable manner.

A major consideration when choosing a program that gives you advice and helps you make decisions about something as sensitive and valuable as your employees is the qualifications of the program's authors. *Personnel Policy Expert* relies on two folks, Jack McGervey and Stephen Kellerman, to provide professional guidance from this advanced expert system.

I don't know Mr. McGervey personally, but I do know Steve Kellerman. I have been in Human Resources for over 20 years myself, with the last eight or so as a consultant. Kellerman was one of my contacts when he worked for the Federated Employers of the Bay Area, dispensing the same help now available from the program. In my opinion, his advice was good then; after reading a number of the policies written by *Personnel Policy Expert*, I'd say the advice is good now.

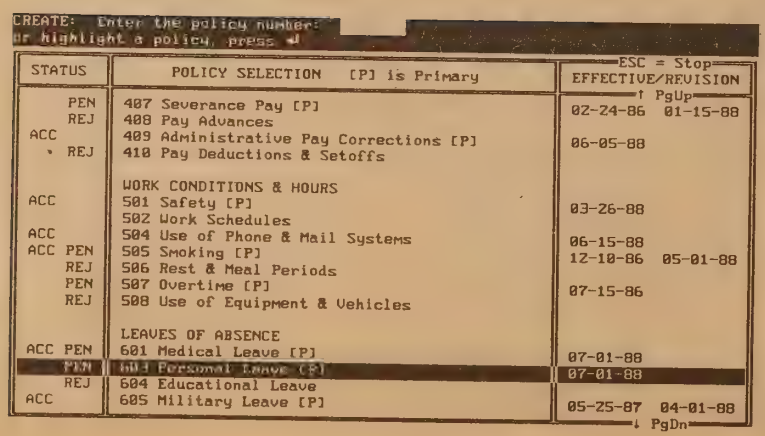
Personnel Policy Expert allows you to create a personnel handbook. You don't need to spend hundreds or thousands of dollars on hiring a Human Resource Consultant to do it for you, nor do you need to find someone with years of experience to head your Personnel Department just to get the handbook done.

An interesting, and important, disclaimer is built into the program's documentation. While we are all used to reading about software that is not warranted to work, only run, this disclaimer is worth quoting:

"*Personnel Policy Expert* has been designed to write personnel policies for employers throughout the United States, based on California labor laws. While California laws are among the most stringent of any state, local and state labor laws vary significantly.

"It is the responsibility of the employer to ensure that the personnel policies adopted comply with all applicable laws. This software is not intended to be a substitute for legal advice nor provide legal guidance of

continued on page 202


CREATE: Enter the policy number
or highlight a policy, press ↵
STATUS
POLICY SELECTION [P] is Primary
ESC = Stop
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PEN 407 Severance Pay [P] 02-24-86 01-15-88
REJ 408 Pay Advances
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502 Work Schedules
ACC 504 Use of Phone & Mail Systems 06-15-88
ACC PEN 505 Smoking [P] 12-10-86 05-01-88
REJ 506 Rest & Meal Periods
PEN 507 Overtime [P] 07-15-86
REJ 508 Use of Equipment & Vehicles
LEAVES OF ABSENCE
ACC PEN 601 Medical Leave [P] 07-01-88
PEN 603 Personal Leave [P] 07-01-88
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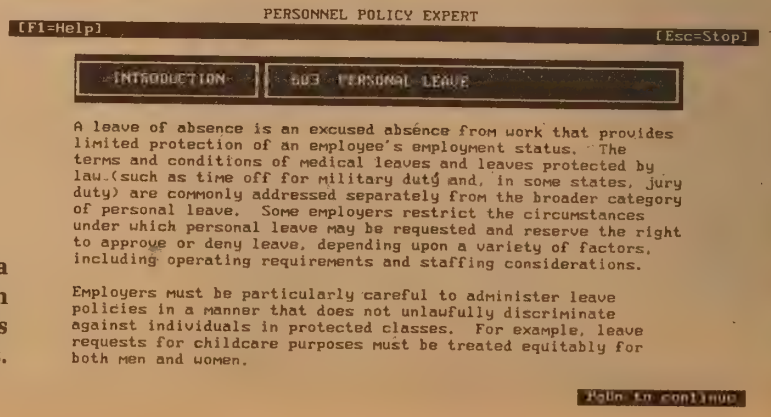
PERSONNEL POLICY EXPERT
[F1=Help]
[Esc=Stop]
INTRODUCTION
603 PERSONAL LEAVE
A leave of absence is an excused absence from work that provides limited protection of an employee's employment status. The terms and conditions of medical leaves and leaves protected by law (such as time off for military duty and, in some states, jury duty) are commonly addressed separately from the broader category of personal leave. Some employers restrict the circumstances under which personal leave may be requested and reserve the right to approve or deny leave, depending upon a variety of factors, including operating requirements and staffing considerations.
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- Keytronics enhanced 101 keyboard
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- One year warranty
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INCLUDES: • MONITOR • VIDEO CARD	MONO 12" 720x350	EGA 14" 640x350	VGA 14" 640x480	Multisync 14" 800x600
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WITH HARD DRIVE				
20MB (65MS)	1519	1457	1859	1945
40MB (40MS)	1629	1958	1979	2255
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20MB (65MS)	1589	1639	1969	2088
40MB (40MS)	1729	1779	2109	2228
40MB (28MS)	1799	1859	2189	2299
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- LED indicators
- 200W UL power supply
- One year warranty
- Vertical case add $95

INCLUDES: • MONITOR • VIDEO CARD	MONO 12" 720x350	EGA 14" 640x350	VGA 14" 640x480	Multisync 14" 800x600
STANDARD SYSTEM	*$980*	*$1200*	*$1430*	*$1530*
WITH HARD DRIVE				
20MB (65MS)	1200	1520	1650	1750
40MB (40MS)	1300	1620	1750	1850
40MB (28MS)	1379	1710	1835	1930
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- 80287 coprocessor socket
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- 2 serial, 1 parallel, 1 game
- 5-drive case w/security lock
- LED indicators
- 200W UL power supply
- One year warranty
- Vertical case add $95

INCLUDES: • MONITOR • VIDEO CARD	MONO 12" 720x350	EGA 14" 640x350	VGA 14" 640x480	Multisync 14" 800x600
STANDARD SYSTEM	*$770*	*$1150*	*$1320*	*$1440*
WITH HARD DRIVE				
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- Rechargeable battery
- 4-layer PCB construction
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- Shadow ROM/video BIOS
- Four 16-bit, three 8-bit slots
- Rechargeable battery
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Get The Most From Your Hard Disk With OPTune

By Woody Liswood

OPTune is a set of programs designed to keep your hard disk running at peak efficiency. It optimizes your hard disk's performance by sorting your disk's directory system, then defragmenting and packing your files so that they are contiguous. It also includes other functions for checking your disk for potential problems and adjusting the interleave ratio for optimum performance.

OPTune also has a check disk "CHKDSK" function as part of the menu structure so that you can fix logical problems with the File Allocation Table without having to leave *OPTune* and return to DOS. *OPTune* automatically runs the check disk routine each time it is booted to keep you from relying on a problem disk. Another section of the menu is a VERIFY and FIX DISK function. This verification predicts and helps prevent DOS errors from occurring so that they cannot rise up and eat your files.

Optimizing The Disk

OPTune works from the now-standard menu bar across the top of the screen. From there you can optimize, Tune, Check, or Verify and Fix your disk.

Within the Optimize section, there are three options, Normal, Packed, and File Realignment. Within all of these functions, you can also set up how you want your directories sorted (Name, Extension, Date, Size, Ascending, or Descending). You can also specify that you want read after write verification during all operations.

Normal optimization works rather quickly. It defragments and sorts all files according to the sort setting, and eliminates erased files from the directory entries in the FAT. Normal, however, does not eliminate all empty spaces between the files, nor does it appear to move files which are already contiguous.

Packed optimization takes about 50% longer to run than Normal. It does everything that the normal function does and also arranges the files on the disk end to end, so there is no empty space between files on the hard disk.

File Realignment does the most complete optimization and takes correspondingly longer. On my 70 Mb drive, the first time I ran with the File Realignment active, it took about 45 minutes to set up everything the way it wanted. It physically places the files on the disk in the same order in which they appear in your directory.

Adjusting The Interleave

With the Tune option, *OPTune* allows you to fine-tune the interleave of your hard disk to get optimum performance. While this part of the program can do wonders for apparent speed, use it with care—if you don't know what you're doing and fail to follow instructions exactly, you can destroy all of the data on your hard disk. The *OPTune* documentation says that it can adjust your hard disk so that it runs from 20% to 300% faster.

While the documentation claims that *OPTune* works on most hard disk formats including some of the more unusual, I was only able to adjust the interleave successfully on one of my three machines—the program requires a physical sector size of 512 bytes.

On my ALR, I use *VFEATURE* as a logical device driver with a larger sector size; *OPTune* told me I had a non-standard controller and would not allow me to test or change the interleave. On my old Compaq portable with a Tulin hard drive and a DTC controller, *OPTune* told me that I had a removable cartridge drive and told me to turn it on. When I just told it to do a test on the interleave, it destroyed the boot track of the hard disk. I had to do a low level then a high level format to regain control. So beware—you can destroy your disk with this program if you don't know what you're doing. Back up everything before you do anything when you are fooling with the interleave. (I am partial to Gazelle systems *Backit* program for doing full and partial backups.)

However, *OPTune* worked fine on the standard Compaq Deskpro. During the interleave test, it tried a number of different interleaves, told me that I had a 3:1 interleave, and that my particular system would work best with a 5:1 interleave, which would give me a 237% faster disk. I went ahead and did the interleave, and things did appear to work faster: I was unable to do before-and-after stopwatch tests.

There are two options for tuning: "safe" and "quick." When you use safe mode, you can recover from a power failure during the tuning process. *OPTune* includes a Recover program, which will retrieve any data lost by this type of problem during the tuning process. You also have the option of telling *OPTune* what cylinder to start with during the tuning process.

After starting the tuning process, *OPTune* will give you some basic information about the heads, cylinders, and storage capacity of the disk. Then it lists a variety of interleaves and shows you which one of those interleave settings would work best with your disk. On the COMPAQ with a 20 Mb disk, it took about 70 minutes to do the interleave changing.

Verify And Fix Disk

This section of the program will write a variety of bit patterns on all portions of the disk, test, retest, and test again, forcing the disk to operate at peak efficiency. If it finds any marginal areas on the disk, it will block those sections out so that DOS will no longer use them for any purpose. It also uses a safe mode and requires a floppy drive to which to write the data while the bit testing is being done to the hard drive.

A level one test writes a "unique" bit pattern which is 512 bytes long; it reverses the magnetic polarity of each bit on the disk and then tests that spot. According to *OPTune* documentation, this test catches most weak spots on a disk that may be about to go bad.

With the Tune option, *OPTune* allows you to fine-tune the interleave of your hard disk to get optimum performance.

The level two test does the level one test, then tests eight "unique" bit patterns, which are 32 bytes long and used by hard disk manufacturers to detect errors. Then level two performs other bit tests that are proprietary to Gazelle Systems.

Level three does both level one and level two tests, then does eight additional Gazelle systems patterns. *OPTune* recommends cycling at least three times. On my 70 Mb Priam drive with a Western Digital 1006 WAH controller and *VFEATURE* device driver, the level three test repeated three times took 28 hours.

Recover And Save

Lastly, there is a recover and save program accompanying the *OPTune* programs. These are the typical save-the-file-allocation-table programs, which allow you to recover from an accidental formatting or reformatting of the disk.

All in all, *OPTune* gives you a competent set of utilities that may make you breathe easier as a hard disk owner and user. However, especially if you have non-standard equipment, be sure to back up all your applications and files before you try to tune your disk. (Published by: Gazelle Systems, 42 North University Avenue, Suite 10, Provo, Utah 84601, 800/233-0383.) ■

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PC MAGAZINE EDITOR'S CHOICE

AUSTIN COMPUTER SYSTEMS

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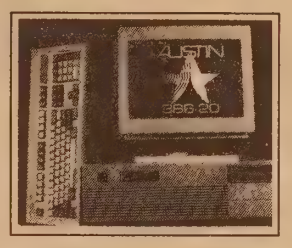

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War Of The Word Processors

Microsoft Word 4.0

Power To Spare

By Tony Rocco

I can't stand using an underpowered, underfeatured word-processing application. Even if it does everything I need, I really want it to do things I never thought I needed, like sort, perform calculations, do word and character counts, create tables, and so forth. Or program in PostScript, even. I may rarely, if ever, use many of those features, but who cares? Porsche owners may never need to go 150 miles per hour either, but they sure appreciate having that capability.

The new version of *Word,* which lists at $395, is anything but underfeatured or underpowered. If you're one of those folks who thought that *Word* 3.0 was pretty nifty, you're going to think 4.0 is really something special. And if you're one of those people who liked all the features but whined about the application not being "Macish" enough, *Word* now allows you to configure its menu commands any way you find "Macish." You can take a command under, say, the Format menu and place it under the Document menu and give it a completely new key-command set. You can also save different menu configurations as separate files for users with different preferences. Of course, there's only so much you can do with moving menu commands around. If you object to dialog boxes within dialog boxes, you may actually

If you're one of those folks who thought that *Word* 3.0 was pretty nifty, you're going to think 4.0 is really something special.

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MacWrite II

Claris Gets It Right

By Mary Eisenhart

When Apple's *MacWrite* came out in its 5.0 version under the new Claris label, the future of the product, which had once been bundled with every Mac, looked pretty unpromising. The 5.0 version suffered from a bad case of too little, too late: while it introduced a few improvements over the venerable 4.5, it continued to lack features every other Mac word processor had had for some time, from niceties like showing invisible characters to out-and-out necessities like having multiple documents open on the screen at the same time.

Many loyal *MacWrite* users gave up and switched to *WriteNow.* Or, if they had enough memory, *FullWrite Professional,* which compensated for its insatiable lust for RAM with unique and delightful features like embedded notes and wrapping text around irregularly-shaped graphics. And some went for *Word* or *WordPerfect,* which offered power and a fair amount of connectivity at a hefty price, both in dollars and in dealing with interfaces that were neolithic by Mac standards.

MacWrite II is no longer simply a default, it's a product you've almost got to have compelling reasons *not* to buy before you rule it out.

MacWrite II was long awaited as the product that would either re-establish *MacWrite* as a standard or sink the name into eternal oblivion. And, speaking as a diehard *MacWrite* user who's been using the new version for several months now, I'd say that Claris has come up with a real

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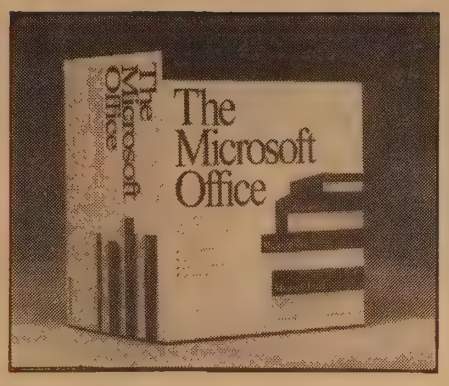
MACORCHARD



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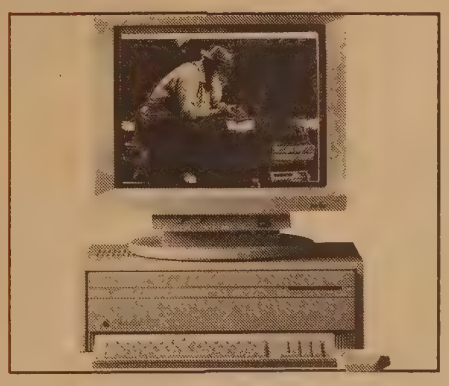

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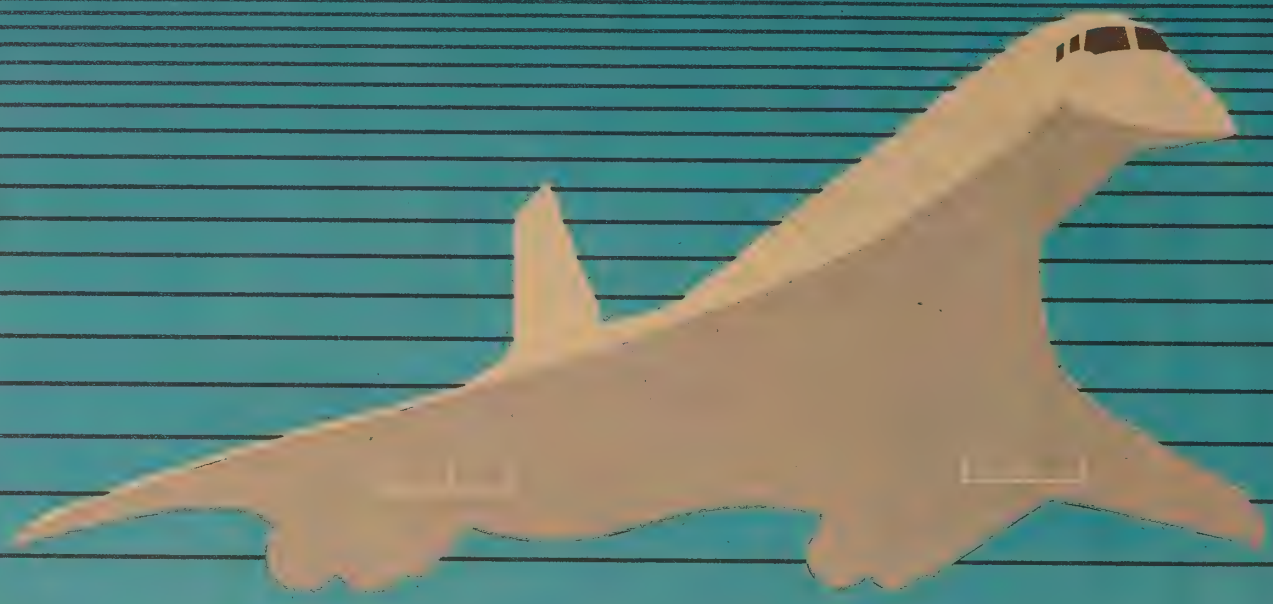

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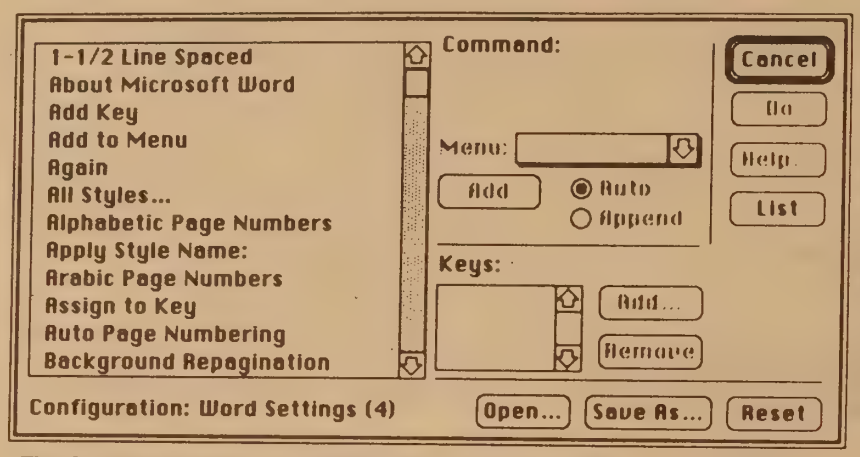
Microsoft Word 4.0 MacWrite II

have more trouble with 4.0 than the earlier version despite customizing the menus.

New Features: Style Sheet Improvements

As far as the interface is concerned, Microsoft did two things I wanted them to do: give Print Preview a keyboard command and make Style Sheets more accessible. You can now double click on the status bar at the bottom of the screen indicating the current style and get the "Define Styles..." box. Styles also reside on a pop-down menu on the left side of the ruler. If you keep your ruler down at all times, you can easily select styles from there. The most efficient thing to do, however, is create your own Work menu and list each style under there. That way each style can be easily selected whether or not the ruler is visible.



The Commands dialog box allows you to easily configure Word's menus and key commands any way you like.

Table Generation

Aside from customizable menus, the most impressive new thing about *Word* is its table generation capability. Business users who need to present information in tabular form will find this feature a delight. You can create tables in two ways: by converting text into tabular form or by creating an empty table into which to manually enter text. Both involve giving the Insert Table command from under the Document menu. By highlighting the desired text first, you can convert into table form text delimited with tabs or commas, or text that's in paragraphs or side-by-side paragraphs. (Each paragraph would occupy a cell.) Or you create an empty table to fill in with text and numbers. In the latter case, you also determine the number of columns and rows and column widths. You can format the text in any row, column, or cell independently for alignment, leading, indents, and character attributes. And you can easily convert a table back into tab or comma delimited text, or into paragraphs, by selecting the desired rows or columns and giving the Table to Text command.

Document Preview

The ability to preview a document is one feature I really liked when *Word* 3.0 was introduced many moons ago. While Microsoft has enhanced this capability by putting a print icon in the Print Preview window, it has also reduced its usefulness by eliminating the magnifying glass that enabled you to enlarge selected parts of text and graphics for close examination.

A new option, Page View, gives you a *WriteNow*-like page with margins indicated by dotted lines and actual page boundaries shown on screen. This mode is necessary to view multiple column text and footnotes in true WYSIWYG, and is a great improvement over having to switch between galley mode and Page Preview in the earlier version. Page Preview in 3.0 and its equivalent in 4.0, Print Preview, show pages as they are going to print, but do not allow editing. To view text the way it's going to look as printed and have the ability to edit it, you now use the new Page View mode. *Word*'s default galley mode, which works much faster, is adequate when formatting is of secondary importance.

continued on page 86

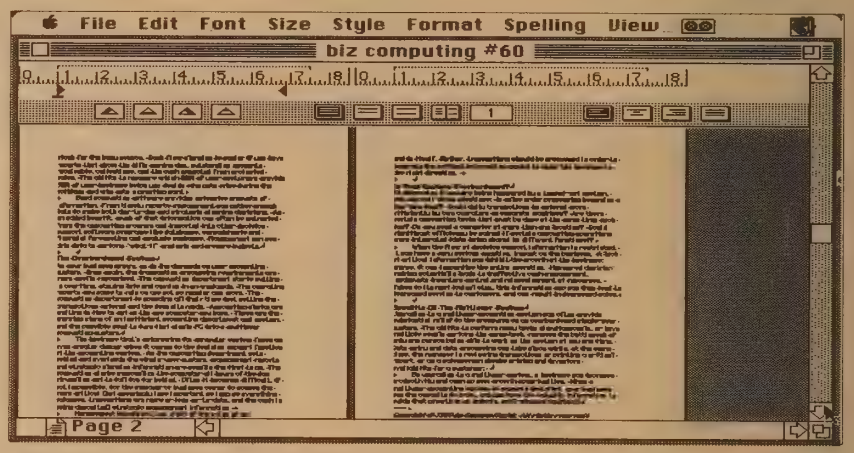
winner. *MacWrite II* is no longer simply a default, it's a product you've almost got to have compelling reasons *not* to buy before you rule it out. Competitively priced at $249 list, it includes the features most people are ever likely to need, and makes it easy for those people to use them.

What's New

MacWrite II includes many new features and enhancements, many of which it shares with other word processors: multiple column capability, color text support, mailmerge (about which more later), footnotes, the long-awaited ability to have more than one document open at a time, and control of formatting characters. The miserable spell-checker in *MacWrite* 5.0, which was so slow as to be useless, has been replaced by the speedy and intelligent *SpellFinder* from Microlytics. There's still no outliner, but considering the sheer clunky counterintuitiveness of the existing outliners included with Mac word processors (as contrasted to the perfectly wonderful one included with Aldus *Persuasion*), you're probably better off buying *Acta* if you need an outliner anyway.

One of my personal favorites among the new features is that you're now able to save a selected piece of text as a separate file, rather than going through tortuous sequences of cutting, closing, opening, pasting, etc.

Search-and-replace functions have been enhanced; you can now search only for 10-point italic Palatino occurrences of a particular word and have them all changed to 14-point underlined Symbol, if you're so inclined.



MacWrite II lets you view pages side-by-side and reduced; unlike some other word processors, it lets you make changes to the document in this mode.

The *MacWrite II* window is something of a departure from the familiar *MacWrite* look: unless you tell it not to, your document will open up in Helvetica and with a right margin extending off the right edge of the screen. There's a horizontal scrollbar at the bottom of the screen, and the page number in the vertical slider bar has been replaced by the more *Word*-like page number in the bottom left corner. However, with minor exceptions using the new *MacWrite* feels much like using the old *MacWrite*; Claris has managed to add and enhance a myriad of features without sacrificing the marvelous ease of use that's becoming something of a company hallmark.

Mailmerge

While Claris trails the pack in having brought mailmerge to its eager users, it has its competitors beaten hands-down with the actual implementation of this function.

For a description of how other word processors (*Word*, *FullWrite*, *WriteNow*, etc.) handle mailmerge, see the accompanying *Word* review. It's a cumbersome process of hand-keying chevrons and codes into your text, and nobody likes it.

On the other hand, never having done a mailmerge in my life, I managed to put together a form letter complete with IF/ELSE statements in ten minutes, just glancing occasionally at the manual for syntax. Now THAT's ease of use.

I used a database in *FileMaker* (but any tab-delimited ASCII will do), exported the records I wanted as a merge file, then opened the merge file from the File menu in *MacWrite II*. From that point it was simply a

continued on page 86

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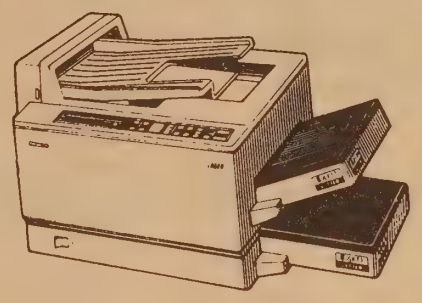

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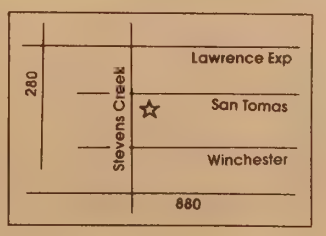

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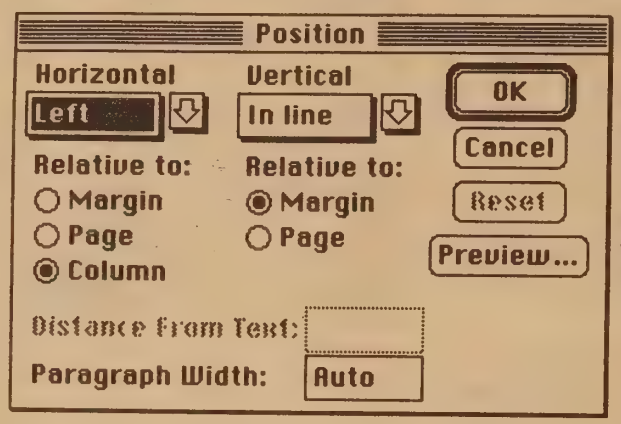
Microsoft Word 4.0 MacWrite II

Miscellaneous Improvements

Word 4.0 has several other completely new features such as smart quotes, background repagination, picture placeholders for faster scrolling, color text, an italicizable cursor, support for Microsoft Mail, and a Format Again command (for repeating a formatting command). In addition to these new features, *Word* has had some of its old ones enhanced and streamlined. Index and table of contents generation is easier now that *Word* automatically enters the proper invisible text to mark entries rather than require you to type it in manually. An Insert Page Break command substitutes for having to press the Command and Enter keys simultaneously. Positioning side by side paragraphs, awkward and tedious in *Word* 3.0, is much easier with the Position command in 4.0. You also gain the ability to absolutely position paragraphs or graphics (which are treated as characters in *Word*) and put as much space between them and surrounding text as desired.



Positioning paragraphs side-by-side or anywhere on a page is done with the Position dialog box.

A few enhancements also have been made to the outlining capability in *Word*, but they are minor. While fairly easy to use, the outliner is still not the full-featured thing the outline power-user would ideally prefer. Fortunately I don't put outliners to much use, so it doesn't bother me. But if you're serious about outlining, you may have to look into a desk accessory like *Acta* from Symmetry Corporation. Maybe they should even bundle it with *Word*.

Aside from customizable menus, the most impressive new thing about Word is its table generation capability. Business users who need to present information in tabular form will find this feature a delight.

Mail Merge: Still Not Where It Should Be

One thing I wish they could also streamline is mail merge. It works the way it always has, by the user marking fields on the main document with chevrons and delimiting those in the DATA document with tabs or commas. I read somewhere that this technique is actually some remnant of a primitive PC programming language, at least as far as the chevrons go. This way of doing things has no place in a Macintosh application. Maybe Microsoft can take a lesson from the way it has enhanced the implementation of index and table of contents generation to make mail merge easier as well.

You can enter IF, SKIP, SET, ASK, INCLUDE, and NEXT commands when performing a mail merge. What does that mean? It means that you can enter or not enter text in a merged document depending on whether it meets some defined criterion. Skipping a record entirely, depending on whether a certain criterion is met, is possible as well. You can also have *Word* prompt you to enter a value for each merged piece or for the entire batch. And if you have text in a third document, you can include it in your merged text with the NEXT command.

Graphically Speaking

As far as graphics handling goes,

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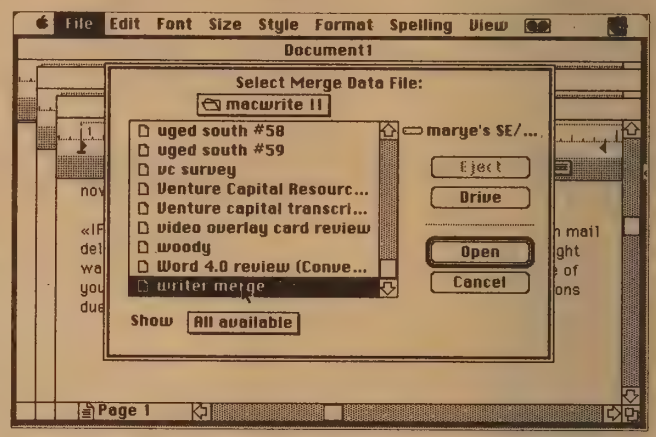
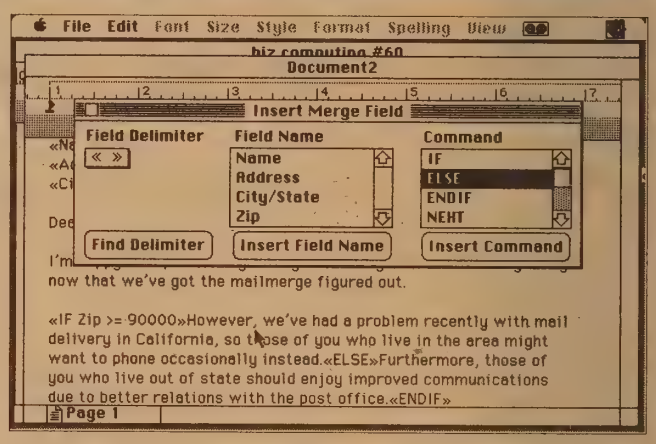
matter of positioning the cursor where I wanted each merged field to go and selecting the appropriate criteria from a dialog box.

If your office frequently has to send out form letters, especially form letters with content that varies according to certain criteria (e.g. California residence, unpaid balances over $100, school-age children, etc.), I can't recommend this package strongly enough. It makes mailmerge a breeze instead of an ordeal.

Unlike what's standard in other applications, MacWrite II makes mailmerge a simple matter of selecting and clicking. This paragraph results in one message going to California-based recipients, another to those out of state.




File Edit Font Size Style Format Spelling View
Document2
Insert Merge Field
Field Delimiter
« »
Field Name
Name
Address
City/State
Zip
Command
IF
ELSE
ENDIF
NEXT
Find Delimiter
Insert Field Name
Insert Command
now that we've got the mailmerge figured out.
«IF Zip >= 90000»However, we've had a problem recently with mail delivery in California, so those of you who live in the area might want to phone occasionally instead.«ELSE»Furthermore, those of you who live out of state should enjoy improved communications due to better relations with the post office.«ENDIF»
Page 1

Style Sheets: Half A Loaf

Having always been fairly content with the *MacWrite* default settings through 5.0, I never much saw the need for style sheets. Hey, if it opened on the screen in 12-point Geneva I was happy. However, when *MacWrite II* came along and insisted on opening 12-point Helvetica documents with margins going off the screen, I found this sufficiently disorienting to try to figure out how to fix it.

You fix it with style sheets, or, in Claris parlance, MacWrite Stationery. Style sheets determine the default settings for documents you work with frequently, and while *MacWrite* lacks the sophistication of *Word* in this regard, it allows you to save as many types of stationery (say, one for reports, one for correspondence, etc.) as you like. You can also set up a document with the font and dimensions you like, save it as stationery, and install it in your System folder, and then all your new *MacWrite* documents will open up looking the way you like them.

In real life, this doesn't work as well as I'd like. True, new blank documents now open with narrower margins and the Geneva font I know and love. However, other documents, whether *MacWrite* or converted from elsewhere, cling persistently to their original formats when you open them in *MacWrite II* no matter what you've got installed in your System folder. I think Style Sheets would be a lot more useful if everything opened up looking the way you wanted it to, or if you could make it that way with a click or two. As it is, I still spend too much time reformatting received text.

Format Conversion

A big improvement over earlier *MacWrites* is that *MacWrite II* now seamlessly imports and exports many other standard word-processor formats, including *Word* 3 and *WriteNow* 1, as well as plain ASCII. Version 1.0 has the seriously distressing flaw of not saving in ASCII-with-linefeeds format, a major draw-

continued on page 88

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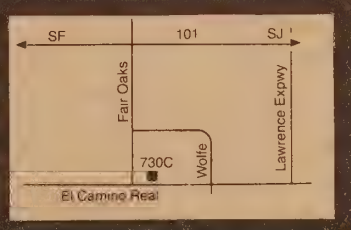

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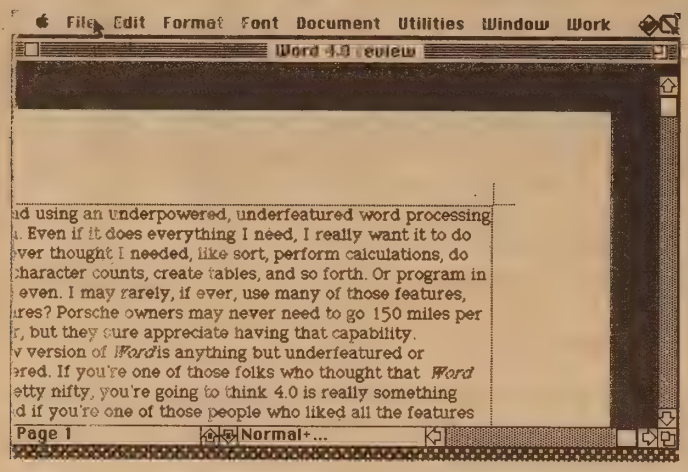
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res? Porsche owners may never need to go 150 miles per
, but they sure appreciate having that capability.
v version of Word is anything but underfeatured or
ered. If you're one of those folks who thought that Word
etty nifty, you're going to think 4.0 is really something
d if you're one of those people who liked all the features
Page 1
Normal+...

The new PageView mode give you editable WYSIWYG for the first time in Word.

you still can't wrap text around a graphic *a la FullWrite*. Nor can you create graphics from within the application, also possible in *FullWrite*. All right, you *FullWrite* fans can gloat over these "deficiencies" as long as we *Word* aficionados can take pride in the fact that our application of choice doesn't take four megabytes of RAM and 32-bit CPU to run efficiently. If you really want to make heavy use of graphics in your word-processing documents, Microsoft has bundled *SuperPaint* 1.1MS (for Microsoft) with *Word* 4.0. That way you can have paint and object-oriented graphics capabilities without having to invest your life savings in new SIMMs. On the topic of graphics, I should also mention that *Word* does not yet support color graphics.

Extras

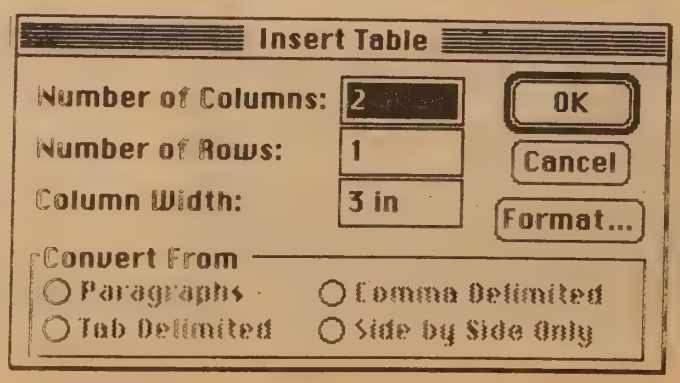
Other things bundled with the new *Word* include a version of Microlytics' *WordFinder* that works only with *Word*. This DA is an on-line thesaurus that I have found easy to use and fairly valuable. *AutoMac* is an INIT also included with the application. This software makes it possible to create macros, sequences of commands the user programs and can later execute with a single keystroke.

Purchasers of *Word* 4.0 can also buy a software utility called *DocuComp* from Advanced Software at a fraction of the price it normally sells for. This unique software allows you to do a comparison of two versions of a document to show what changes have been made from one to the other. The two documents don't even have to be created in the same application.

Conclusions

The confirmed *Word* user will find much to be happy with in the new version. Customizable menus, table generation, an editable page view mode, easier index and table of contents generation, automatic pagination, smart quotes... the list goes on and on. The uninitiated in search of a true power word processor will definitely find *Word* 4.0 worth serious consideration. Unless your requirements include creating graphics within the application, the new *Word* can hold its own against any other word processor.

And of course you can always challenge your friends to do PostScript programming on their word processors. I'll bet they don't have a car that will go 150 miles per hour either. ■

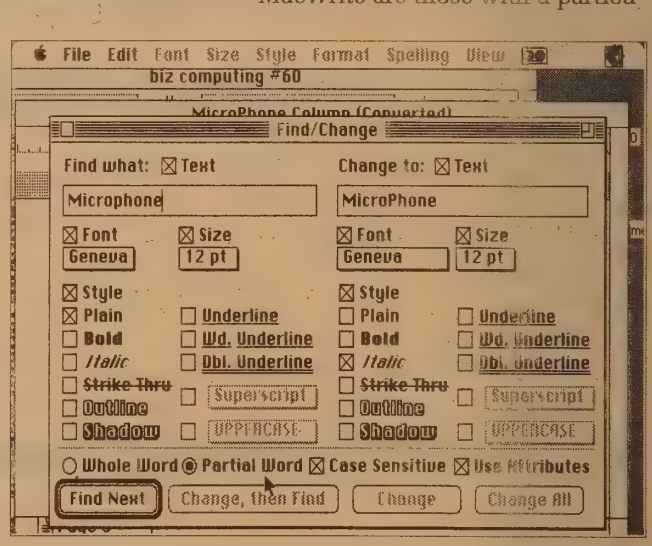


With Insert Table, the presentation of data in tabular form is mad much easier.

back if you're moving text back and forth with non-Mac systems and an actual step backwards from old *MacWrite*, which supported text-with-linefeeds in a none-too-elegant form. However, version 1.1, due about the time you read this and free to registered users of 1.0, remedies this bone-headed omission and provides even more conversion utilities, including *WordPerfect* and a number of PC formats. Still no *FullWrite* converters, though, a decision which apparently has more to do with Ashton-Tate's reluctance to share its code than with Claris's (or Microsoft's, or T/Maker's) unwillingness to provide file exchange capabilities.

Graphics And Color

MacWrite II lets you choose a color for your text. Unlike most word processors, it will also let you import color graphics into your document.



Search-and-replace functions have become much more sophisticated.

Given the current state of output devices, however, it's questionable how useful this is right now. Even a color-ribboned ImageWriter ignores colored text and graphics magnificently, and word-processing documents aren't great candidates for film recorders and service bureaus. *MacWrite* also won't generate color separations.

Another reason you probably shouldn't throw out your desktop publishing package just yet is that while *MacWrite* will let you import graphics into your text, and has made it a whole lot easier to size and crop them using standard Mac handle-grabbing techniques, it still won't wrap text around regularly-shaped graphics, let alone irregular ones. If this is something you really need from a word processor, buy *FullWrite*, which does it beautifully.

Who Needs This Package?

Overall, there are quite a few good word processors out there for the Mac at this point, and your choice should be governed chiefly by which package offers the features you need at the best price. Claris generally positions its products as midrange, offering the capabilities most people are likely to need, and about the only people who shouldn't be seriously considering *MacWrite* are those with a particular requirement (e.g., wrapping text around graphics, detailed session records, sophisticated table handling such as that offered by *Word* 4) it doesn't satisfy.

A big improvement over earlier MacWrites is that MacWrite II now seamlessly imports and exports many other standard word-processor formats.

If your office does a lot of mail-merged correspondence, *MacWrite*'s supremely accessible approach to this function probably makes it your best choice. If your business is starting to outgrow its all-in-one package like Microsoft *Works* but still needs to do a fair amount of database/word processing file sharing, the *MacWrite II*/*FileMaker II* combination is affordable and hard to beat for ease of use. And if your word processing needs run to letters, reports, term papers, theses, and the like, *MacWrite II* will do all you need. ■

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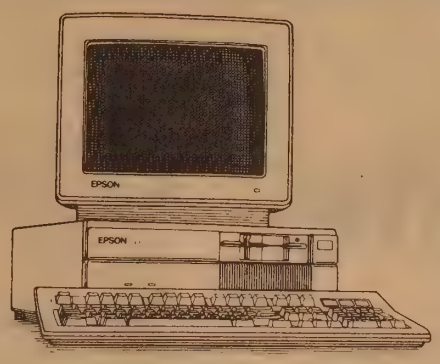

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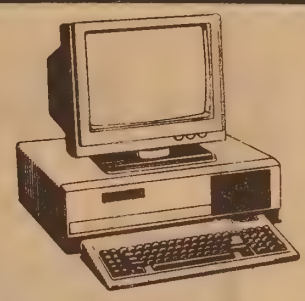

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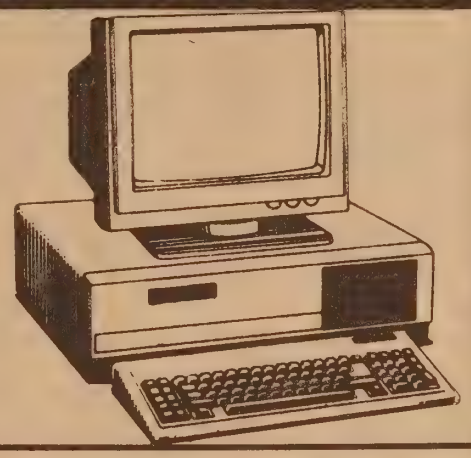

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Indispensable Mac Utilities

Part 1

By Fredric Lieberman

Utilities aren't the applications you use to do the various sorts of work you probably bought your computer for (information processing, number crunching, designing and producing publications, or playing *Crystal Quest*). Rather, utilities help with housekeeping chores that proliferate as our electronic filing cabinets get stuffed to overflowing with data of all sorts—they help find lost files, improve aspects of the operating interface, and add neat little features that the original programmers of a system or application left out. They help to back up, preserve, and protect our programs and data, and so forth.

Utilities can range from very small pieces of code that do one small job to complex applications. In this survey, I'll review a number of utilities that I've come to use regularly in my own system and regard as pretty much indispensable everyday tools. Later installments will take up more special-purpose utilities.

Four For The System Folder

Four small utilities that have a permanent place in my System Folder are *Aask*, *EZ-Menu*, *SFVol INIT* 1.5, and *SFScroll INIT* 2.

SFScroll INIT 2 is a free program by Andy Hertzfeld that can be found on most online services or in user-group collections. It is (as the name implies) an INIT—that is to say, a piece of code that automatically gets loaded whenever you start up the Macintosh if it is found in the active System Folder.

SFScroll INIT makes one small change to the Macintosh user interface: when you close and then reopen a scrolling list of files in a "Standard File Dialog," the list re-opens at the point where it was last closed, rather than opening alphabetically at the top of the list each time.

SFVol INIT 1.5 is a shareware utility, part of the *StuffIt Utilities Package* by Ray Lau, also available from user groups or online services. *SFVol INIT* makes another small change to the Macintosh user interface, by adding the ability to create, name, and enter new folders from within a "Standard File Dialog" box.

Figures 1 a-d show how *SFVol INIT* works. With *SFVol INIT* installed, it will always try to display the amount of free space on the current disk at the top of a dialog box (in this case 8594 K at the top of Figure 1a). When you click and hold on the disk icon, a pop-up menu appears directly below the icon that shows the names of the currently mounted disks, and three functions (New Folder..., Free Space..., and About...) (Figure 1b). Dragging to any of the disk names will move you to that disk directly—avoiding the need to cycle through disks or drives when you have many mounted at the same time.

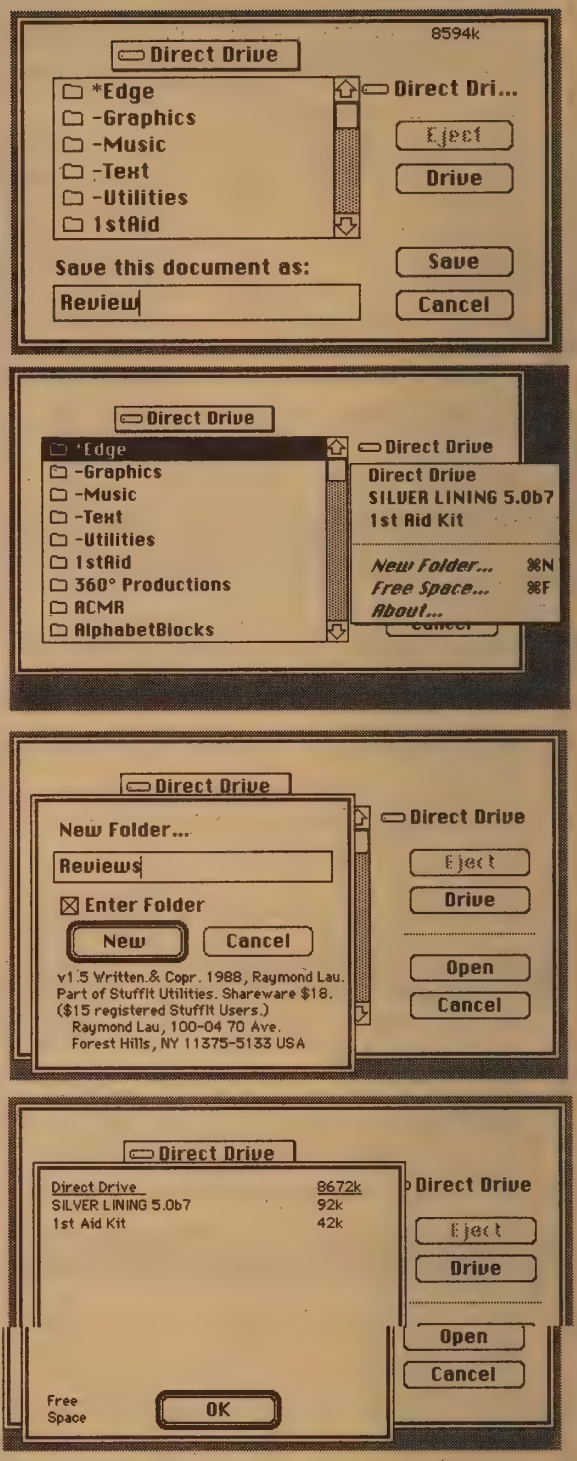
The "New Folder..." function opens a new dialog box that allows you to create, name, and, if you like, enter a new folder on the selected disk prior to the "Save" operation (Figure 1c). The "Free Space..." function brings up a dialog box that shows the space available on all mounted drives or disks, with the currently selected disk underlined (Figure 1d). While this neat little program is particularly useful in conjunction with Ray Lau's *StuffIt* compression/archiving utility, it clearly can be a time saver in many situations.

EZ-Menu (version 1.1) is part of the *MockPackage Plus Utilities* by Don Brown of CE Software. It is a "CDEV" (Control panel DEVice) that loads at system startup time like INITs, but CDEVs have some functions accessible through the Control Panel.

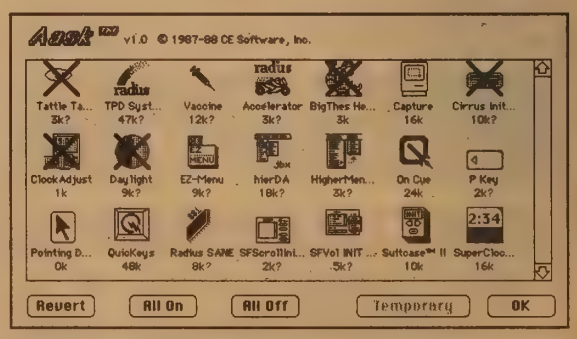
EZ-Menu is a time-and-labor-saving improvement to the Macintosh user interface, but not all users appreciate it equally. It changes the action of the mouse pointer in the menu bar, so that menus drop automatically when they are touched by the pointer, without waiting for a "click" from the user. To select a menu item, you move the pointer to the desired item and then click. It's a shortcut that takes some getting used to, but it speeds things up considerably once you get the knack. Version 1.0, available as shareware for quite a while, had some bugs and incompatibilities that have been fixed in the current version 1.1.

Aask (Version 1.0) is another CDEV from CE Software, and is also included as part of the *MockPackage Plus Utilities.* An unauthorized beta-test version of *Aask* leaked out to some of the online services, and CE Software warns against using it, since its behavior may be unpredictable. The release version of *Aask* (as well as those of all the utilities reviewed in this article) is stable and, as far as I can tell, bug-free.

Aask allows you to select which INITS and CDEVs you would like to make active or inactive when you start or restart the system. This is very handy for quickly switching system configurations, or for troubleshooting incompatibilities between various INITS and applications. To reach the *Aask* screen, hold down the space bar during the startup cycle (this key choice is configurable from the Control Panel), or select "Aask Now" from *Aask*'s Control Panel window. Figure 2 shows a typical Aask display.



SF Vol INIT lets you create new folders from within a dialog box



AASK makes it easy to configure your system with the INITs and CDEVs you want to use.

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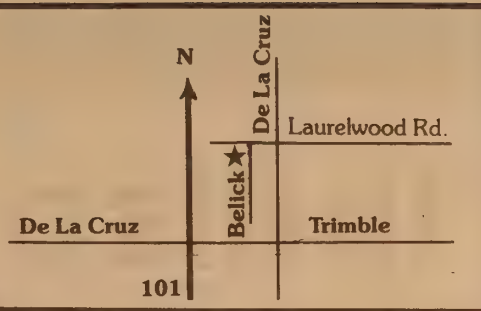

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By clicking on an icon, you "turn off" the associated INIT or CDEV, and the icon is grayed and "X'd" out; conversely, clicking on an X'd out icon turns it back on again. The changes can be temporary—for the current session only—or permanent (until you go back to *Aask* again); and the "All On" and "All Off" buttons are handy for debugging INIT conflicts.

Screen Dumps Improved

The Macintosh operating system comes with a built-in function-key (FKEY) that makes a *MacPaint* copy of whatever is showing on the screen. This is done by pressing Shift-Command-3; the screen is then "dumped" onto disk as a *MacPaint* file named "Screen 0." (Subsequent screens are numbered sequentially up to 9, which is the maximum you can have without stopping to remove or rename some of them.)

Consider Figure 2. I could have used the built-in FKEY to create a *MacPaint* screen dump, then switched over to *MacPaint*, opened the file "Screen 0," copied the relevant part of the screen to the clipboard, returned to the word processor, and finally pasted the Figure into the text. A cumbersome operation, even in a MultiFinder environment with sufficient memory and infrequent system crashes.

What I actually used is an improvement on Apple's system, an elegant little INIT utility called *Capture*, from Mainstay. When you have *Capture* in your system folder, Shift-Command-3 turns the cursor into a crosshair, and you can easily select an area of the screen by dragging out a marquee, just as in *MacPaint*. When you release the mouse button, the selected area is copied directly to the clipboard, rather than dumped out to disk, and is thus immediately available for pasting into the current program.

As a further enhancement, pressing the option key after pressing Shift-Command-3 (but before making the selection), copies the selected area to the clipboard as a PICT (*MacDraw*) object rather than as a PNTG (*MacPaint*) bitmap; it works in color on the Mac II, and has no trouble with MultiFinder or large-screen displays. At about $40+ street price, *Capture* seems a bit steep for such a limited-function utility, but for those who need reliable and quick copies of screen displays, it's an important enhancement to the Macintosh operating system, and well worth the investment.

Finder Replacements

Several multi-purpose utilities are available to replace and enhance many of the functions of the Macintosh Finder. Two of the most popular and powerful are *DiskTop* (current version 3.0.4) from CE Software and *DiskTools II* from Electronic Arts. Both of these utilities are DAs, and share much of the same functionality. From within any program you can invoke most of the functions available in the "Finder," and in addition access a number of significantly enhanced features. Figure 3a shows the main *DiskTop* file display, Figure 3b shows the parallel display in *DiskTools II*.

Both programs provide facilities to copy, move, delete, rename, find, and get information on files or folders, and create new folders, without leaving the program in which you are currently working. Both programs also allow launching of new programs without returning to the Finder. Other functions are available from the menu bar. Both are powerful and well-designed programs, and one or the other should be on every Macintosh workstation.

DiskTools II appeals to some users because of its icon-based interface, with a trash-can button for deleting files, a truck for moving files, and so forth; *DiskTop*, on the other hand, makes do with ordinary Macintosh buttons with names rather than icons.

After using both extensively, my preference is *DiskTop*, primarily because of its extremely powerful "Find" options. Figure 4 shows the "Find File" dialog from *DiskTools II*, after I did a search for the present manuscript by looking for all documents created by *Nisus* (the word processor I'm using). Note that the path to the document highlighted on the left is graphically shown in the right window. Files can be searched for by name, date modified, creator, or type—the choice of search type is made by the radio buttons at the top left. The search parameters are, therefore, mutually exclusive, since only one radio button at a time can be selected. Compare this with Figures 5a and 5b, showing a similar search done with *DiskTop*.

DiskTop's "Find Criteria" Dialog is much more powerful than that of *DiskTools II*, since it allows combinations of criteria via additive check-boxes. Thus, when I specified part of the file name, its type, creator, and range of dates, only two files were found (Figure 5b) rather than 33 as in Figure 4. *DiskTop* also gives a graphic display of the path to the highlighted file in the lower window of Figure 5b; the "Go To" button moves you directly to the selected location, and the "Open" button opens the selected application or document.

With hard disks getting larger and data proliferating, it's amazing how easy it is for a file you need NOW to get mislaid five levels deep in the wrong folder. That's when you really begin to appreciate the power of the enhanced "Find" capabilities of both of these programs as compared with the basic "Find File DA" that Apple supplies, which permits searching by name only.

Recently, some new utilities have been introduced that allow searching for text contained within documents—allowing, for example, searching through correspondence files to locate letters mentioning specific topics (for example, "find all letters that include the phrases 'Dear Mom' and 'money'"; or "find all Technical Notes that mention 'fonts' and 'PostScript' but not 'Adobe'"). "Indispensable Utilities, Part 2" will review the best of these (*GOfer*, *Locate*, *Architext*). ■

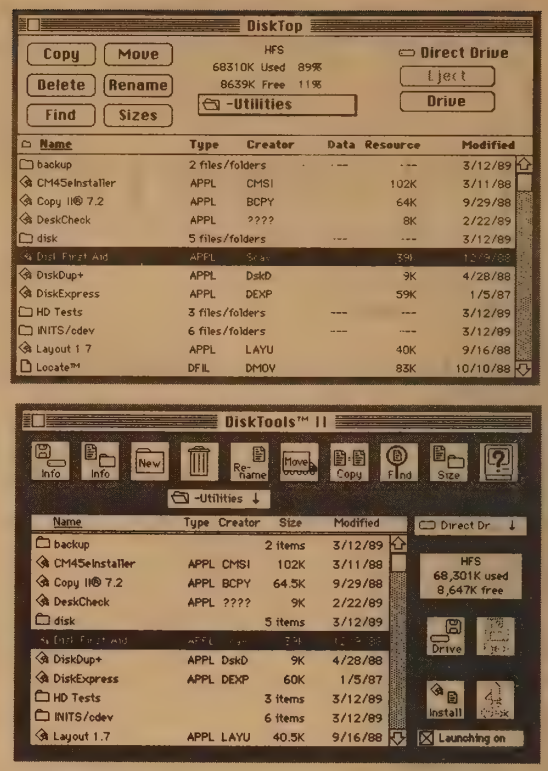
RESOURCES:

Mockpackage Plus Utilities, V. 4.4 ($35)
DiskTop, V. 3.0.4 ($49.95) CE Software, 1854 Fuller Road, P.O. Box 65580, West DesMoines, Iowa 50265

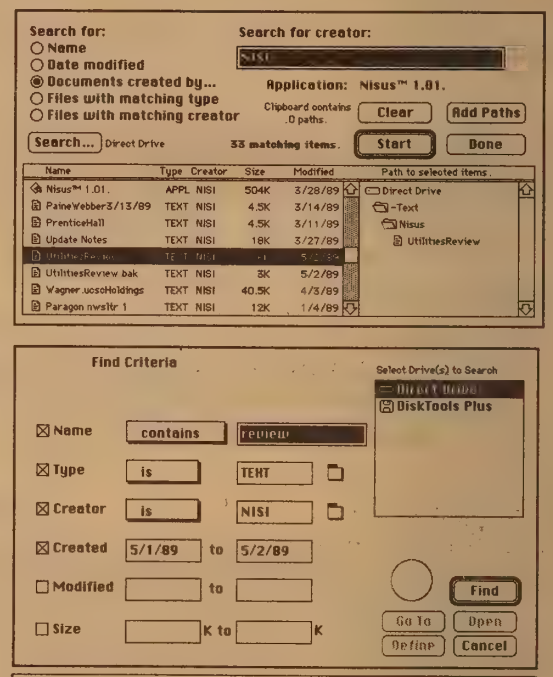
DiskTools II (Part of DiskTools Plus package) ($49.95) Electronic Arts, 1820 Gateway Drive, San Mateo, CA 94404

SFVol INIT, V. 1.5 (Part of Stuffit Utilities) (Shareware $18) Raymond Lau, 100-04 70 Avenue, Forest Hills, NY 11375

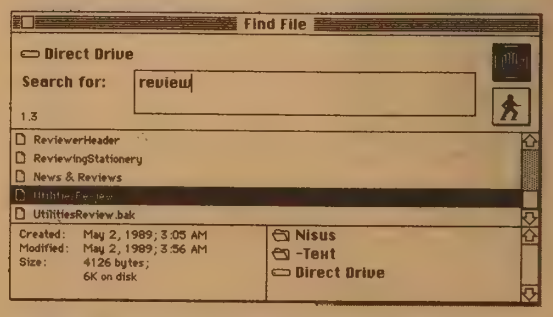
Capture ($59.95) Mainstay, 5311-B Derry Avenue, Agoura Hills, CA 91301



Disk Top and Disk Tools are well-designed Finder substitutes.



Disk Top is more efficient than Disk Tools in that it searches by multiple criteria



Apple's Find File DA was the progenitor of Disk Tools and Disk Top.

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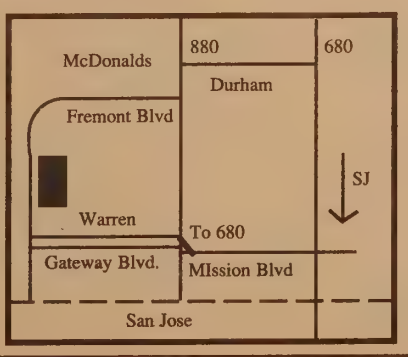

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MAC @ WORK

BMUG

BY DAVID MORGENSTERN

BMUG Fall Follies

The kids are back in school, baseball and football are on and in the air, but the atmosphere in the BMUG office stays constant—constantly busy!. The ringing phones, yelling voices and crashing hard disks are the jugular pulse of the Mac body politic. This month there's bits and bytes of good and bad, hot and not, and new and newer. Go, Team, Go!

7.0 WhipLash Strikes

When Jean-Louis Gassée, President Apple Products division, walked through the door at a Thursday night BMUG meeting, a debate was raging. It wasn't a printer or a networking question causing the fuss. It was the hottest topic on the circuit—System 7.0.

The specific point was: how much memory will be needed to run the new (unreleased) operating system software? Some folks gave the Apple press release line of two megabytes, while others thought that four megabytes would be required to run any program worth running. One group sensibly commented that if two megabytes are needed now for RAM-piggish work, more will be required in the future. Gassée seemed bemused at all the talk.

But even *his* neck twisted around when a voice in the back of the hall said, "It runs under one megabyte of RAM—because I've done it." Thank goodness it's a dark corner.

Singapore BMUG Song

How does the song go? April in Paris, or is it July in Singapore? Well, BMUG was there with our Pacific Rim Macintosh User's Group buddies at the MacWorld Expo Asia '89.

Randy Simon, BMUG's Publication Director, and Joe Urcia, BMUG Fashion Director, crewed the booth at the Raffles City Convention Center. Raines Cohen, BMUG Board chairperson, was a speaker at the Expo. The show hoped to draw 40,000+, but the count was probably around 25,000.

The US standard booth is 10 feet square, which is great for BMUG, with our piles of newsletters and papers. The Singapore booths were all little kiosks, which work fine if you're showing a little piece of software, but not for BMUG T-Shirts, disks, and memberships

The crowd was mostly from Singapore, Thailand, Malaysia, and Indonesia. Japanese Mac users decided to save their yen and did not make a big showing at the event. The booth bunch got a kick out of meeting at least 20 California BMUG members who just happened to be in town during the show. Hey, dudes — BMUG!

Raines had a little cultural problem with his first talk. He's used to handling questions thrown out of the crowd at BMUG meetings and at US shows. No one was really happy when he wound up his prepared talk early "to take questions from the audience." Silence is golden?

There were a few words from the Expo floor on new products

• The Hewlett-Packard *DeskWriter* is a Macintosh *QuickDraw* version of the DeskJet printer. This is an inkjet printer that achieves 300 dpi, the same resolution as the LaserWriter. It uses a non-PostScript outline font technology and will also work with the System 7.0 Apple Outline fonts—whenever they're released.

The reaction to this printer is very positive, but buyers should pay attention to some limitations. It's not networkable and is not designed to print more than 50 pages per day. It takes about a minute to print each page, but is faster in its 150 dpi draft mode. This baby requires more maintenance than a laser printer—the heads must be replaced often, the paper feed mechanism is tricky and you'll need a $20 cartridge every 400 pages.

• *Solo Publisher*, a desktop publishing program by MacAmerica, showed its head at the Expo. It combines drawing tools and strong word processing in a layout product. Old Mac graphic hands were quick to see this software's origins—this is the latest incarnation of the infamous *Scoop*.

Scoop floated around a number of Macworld Expos several years ago, was released and then quickly passed away. The international version of *Solo Publisher* shown at Singapore is copy-protected. Good luck trying to sell a copy-protected program in the domestic market

There seems to be some confusion as to the correct parentage of *Solo Publisher*. Some BMUGers claim that another new program, *PublishIt!* is really the son of *Scoop*. Maybe a new look-and-feel lawsuit in the works—get Perry Mason on the phone!

• Apple showed a ChineseTalk version of the LaserWriter—the NTX-A. It is similar to the KanjiTalk NTX-J that Apple markets in Japan. Each character gets a two-byte identifier, rather than the English script single byte marker. Both of these systems are pacing the floor, waiting for the expanded international capabilities of *System 7.0*.

Upcoming Events

September 14: Informix *Wingz*, New Horizon Software *WordMaker*.

September 21: To Be Announced.

September 28: Marc Canter with Macromind's New Stuff.

October 5: To Be Announced.

October 12: Generic Software's CAD Stuff.

October 19: Xerox Imaging Systems *AccuText* (OCR).

The Virus SIG

• Apple dealers were a bit fried in late June, when they received word that they might be infected with the *nVIR* virus. How would they know this frightening bit of news? Mother Apple sent out the diseased software! Oooops.

The *Apple DeskTop Media Kit*, a multimedia promotion, included a copy of *HyperCard* that was infected. If the program was run, the dealer's hard disk would be infected. It wouldn't take long for an infection to spread to every Mac in a store.

The virus would then be easily spread to other users' troubleshooting programs, renting time on a LaserWriter, or updating system software (this happened to my poor brother-in-law—better to get your updates from clean BMUG disk sets, rather than copied from a public access hard disk). There is also the chance that someone at the store may have "previewed" the software being sold and then re-shrinkwrapped the package!

Every disk that goes in your drive must be checked. Don't trust shrinkwrap. Don't trust the publisher. It's boring and time-consuming, but they all must pass the test. Preformatted hard disks are also suspect, since there are many cases of disks coming out of the box infected. I won't commit hubris by claiming BMUG's disks are invulnerable, but our technical and disk library staff are vigilant.

• Expect to see more nVIR virus clones this year. There are already three nVIR variants currently in circulation, Hpat, AIDS, and MEV#. As new versions of the virus appear, the anti-virus detecting and eradication software programs are subsequently updated. Just like with different mutations of the flu, your software will be infected over and over by contact version-itis.

Virus checking Control Panel Devices, such as

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shareware *Vaccine* and *GateKeeper* or commercial *SAM* or *AntiToxin*, are the first line of defense against unknown virus variants. They can be a pain in the drive with their constant checking and false reports (they sometimes mistake good actions for viral behavior), but they may protect your software from the bad guys.

• A Seattle District Attorney is issuing extradition orders, and planning to issue a warrant, subject to arrest upon entry to the U.S., for Richard Brandow. Brandow is the publisher of the Canadian Macintosh magazine, *MacMag*. He is better know as the creator of the Peace virus. This was the mostly harmless virus spread around the world by Marc Canter's Macromind demo for the graphic program *FreeHand*. The mess apparently cost Aldus some money and they're getting even.

Pantomime Virus SIG

• Now that viruses float around our software, we tend to blame them for every operational problem that occurs. Viruses are bad, but they're not the usual cause of bombs and bad data.

If you're using the latest version of Microsoft *Excel* (2.2), you may encounter a serious bug. Copying and pasting data from formulas in a certain way (not a stand-on-your-head-and-type-with-your-tongue kinda bug) will give different results, even though the formulas look correct! Holy Anomaly ByteMan!

Microsoft has a maintenance release to fix the bug, but the new version isn't easily identified. The bad and the good versions are both *Excel 2.2*. You must **Get Info** your copy and see if the Create date is May 5, 1989, 12:00 pm. If so, it is the buggy version.

Call Customer Service at 206/882-8088. When I called Microsoft's Customer Service, they didn't believe that I needed a new version. Tell them that Product Support says you do, if they give you grief.

• A great way to bring trouble to your Mac is to view the world though Name, Date, Size, or Kind colored glasses. When you **View** a window by **Icon**, or **Small Icon**, you get extra information about your disk. It tells you the number of items and the free space on the disk. Those who use the **Name**, **Date**, **Size** or **Kind** views miss this important news. I recently met a hard disk that had less than 350 K free, because all the windows were Naming. "Crash" went the bit through the window.

Flophouse Floppies

Have you bought a bum disk lately? Most of the major manufacturers of 3.5 floppy diskettes warrant the media *free from defects in workmanship or material.* This means we can send the bad ones back and receive good ones in their place. Hopefully the disk makers can analyze their production problems and do better.

If possible, or convenient, try to return the product to the store where you bought it. People who buy generic diskettes have no choice but to try this route. But the higher priced name-brand media are manufacturer returnable .

Here's a list of a few of the major disk producers. Try calling the customer support 800 numbers. I found some of the representatives flexible and cooperative. They might just ship you a replacement and tell you to throw away the bum disk.

BASF
Consumer Relations
Crosby Drive
Bedford, MA 01730
800/225-4350

Dysan
Technical Support Dept
Xidex Corporation
5100 Patrick Henry Drive
Santa Clara, CA 95050
800/552-2211

Kodak (See Verbatim)
Kodak bought Verbatim and slaps its own labels on the floppies.

Maxell
Consumer Relations/Quality Control
1400 Parker Road
Conyers, GA 30207
201/794-5900

Sony
Send them to your nearest Sony Service Center. The Bay Area address is:
Sony Corporation of America
1359 Old Oakland Road
San Jose, CA 95112

TDK
Customer Service Department
12 Harbor Park Drive
Port Washington, NY 11050
800/TDK-TAPE

Verbatim
Customer Support
1200 W.T. Harris Blvd.
Charlotte, NC 28213
800/538-8589

3M/Scotch/Highland
3M/Data Storage Products
P.O. Box 709
Weatherford, OK 73096-0709
800/328-9438

Polaroid has a premium disk pack with recovery insurance. They promise to attempt to recover a disk that the dog has chewed or went in the laundry. There's no guarantee that your data will be brought back from the dead, only that they'll try. They even dare you to do something so bad to a disk that even they won't risk screwing up a drive to uphold the special warranty.

Steve Costa, BMUG's Technical Director, took the challenge and won. He dipped the disk in Coke, then put a spoonful of peanut butter on the disk through the shutter, and then threw the mess in the microwave. Polaroid wouldn't touch it. But it sure sounds yummy. (Polaroid Computer Data Recording Products, 545 Technology Square, Cambridge, MA 02139, 617/577-2000.)

BMUG Collectibles

• From the primordial beginnings of BMUG, we've been talking about making a catalog of all the shareware in the disk library. We wanted a way members could discover useful programs in the collection, without feeling they were jumping out of an airplane. When the Mac and the Library were young,

What Is BMUG?

BMUG is a non-profit educational corporation, promoting the exchange of information. Like any growing organization, it is many different things to its 7000+ international membership. BMUG, Inc. is a computer user group located in Berkeley, California. The group specializes in computers using a graphical interface. For a while that meant the Apple Macintosh but now includes other makes, models and operating systems, including the NeXT best thing. BMUG supports many Special Interest Groups (SIGs), a eight-line Bulletin Board System (BBS), free HelpLine, software library, weekly meetings, and much more. BMUG also puts out a semi-annual 400+ page book that we call our "newsletter."

Our motto continues to be: We're in the business of giving away information.
Come and join in the dialogue at the BMUG main meeting every Thursday evening, 6:00 to 9:00 (or whenever we finish), in the Physical Sciences Lecture Hall on the UC campus.

The BMUG HelpLine, (415) 849-HELP, and our fax number, (415) 849-9026, provide technical assistance and telephonic hand-holding during business hours (10:00 a.m. - 5:30 p.m.). If your question can't be answered on the spot, we try get you in touch with someone that can help. Of course, not every problem can have a happy ending — but we try.

BMUG has one of the most up-to-date, comprehensive software libraries around with 400+ double-sided disks filled with the latest versions of public domain or shareware programs and HyperCard stacks. New disks are unveiled almost every week at the Thursday general meeting. BMUG also brings you the PD ROM™, our entire library and more on CD-ROM — according to Apple, it's the best selling CD-ROM!

Our BBS offers many of the latest versions of files in our software library as well as news, private mail, rumors, etc. The BMUG BBS is part of the worldwide EchoMac Network on FIDOnet (161/444); by calling a local FIDOnet BBS in your area, you would then be able to get in touch with us wherever you are as well as send mail to users everywhere! BMUG is now a part of the international USENET network (apple!bmug!user.name@sun.com) or (user.name@BMUG.FIDONET.ORG). With our multi-line capability you are now be able to have access to BMUG almost 24 hours a day. It's easy to use, fun, and a great resource.

To get some further information about BMUG please write to: BMUG, 1442A Walnut Street #62, Berkeley, CA 94709. If you prefer to phone our business office call (415) 549-BMUG, or FAX (415) 849-9026.

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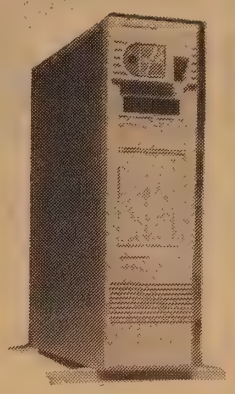

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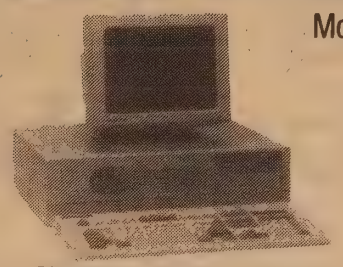

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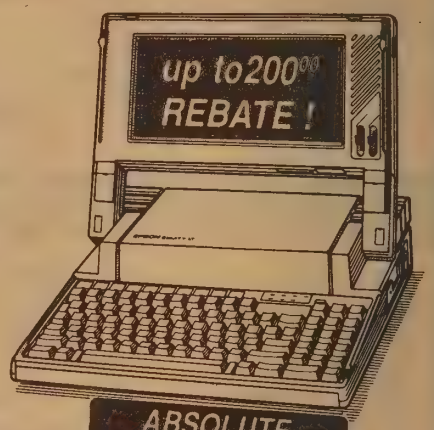


- NEC V30 dual-speed 4.77/10 MHz Microprocessor
- Battery powered
- 20MB internal Hard Disk Option
- Two Detatchable Screens available
- Two Internal Expansion Slots
- Serial, Parallel, & 5.25" External Floppy Drive Ports
- 640K RAM
- Full featured 85 Key Keyboard
- MS DOS 3.2, GW Basic, & Laplink Software
- Weighs less than 13 Pounds

ABSOLUTE LOWEST PRICE!!

EQUITY™ 386/20

FREE DOUBLE WARRANTY ! For 2 yrs Parts & Labor!

- Powerful 20HMz 80386 microprocessor
- 1.2 MB floppy disk drive
- 1MB RAM is expandable up to 16MB via SIMMs
- Ideal as a network file server
- 8 I/O slots available
- Epson's one year limited warranty
- Plus Access 1yr added warranty...2 years total !!

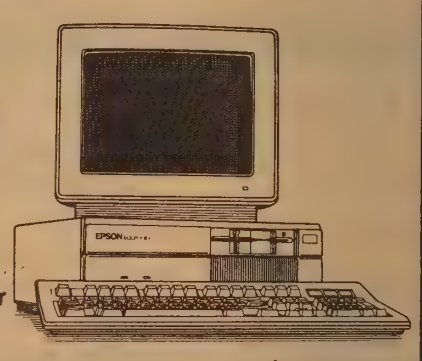
ACCESS PRICE $2695
LESS EPSON REBATE 200

$2495

EQUITY™ II+

FREE MODEM !

FREE MONO MONITOR !



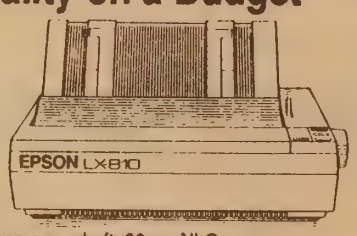
- Powerful 80286 dual-speed 8/12 MHz microprocessor
- 640KB RAM memory, expandable to 15.5MB
- Six full-size expansion slots
- Built-in serial and parallel ports
- Three half-height mass storage slots, plus built-in floppy disk drive controller
- Fully compatible with the IBM PC/AT standard
- Built-in colck/calendar with battery backup
- Convenient front control panel
- Remarkably compact design
- Enhanced, detachable AT-style keyboard
- One year limited warranty

ACCESS PRICE $1099
LESS EPSON REBATE - 150

$949

LX810.. Quality on a Budget

FREE 500 SHEETS OF PAPER !

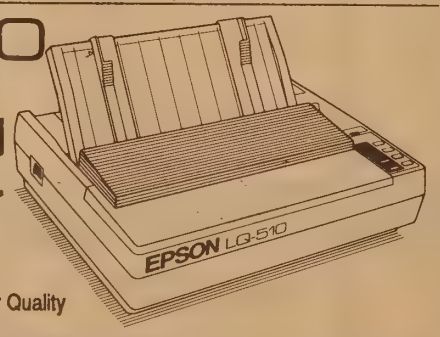


- 200cps superdraft ;30cps NLQ
- Easy typestyle selection
- Versatile Paper Handling
- Quick typestyle & function selection

$209

LQ-510

Letter Quality Excellence!



- 180cps; 60cps Letter Quality
- 360 x360 dpi
- Easy Font, Pitch, & Typestyle Selection
- Paper park • Push tractor
- Optional multifont cartridge available

$349

EPSON - to - MAC

PRINTER INTERFACE & SOFTWARE

USE YOUR EPSON 24 pin PRINTER WITH YOUR MAC !

$59.95

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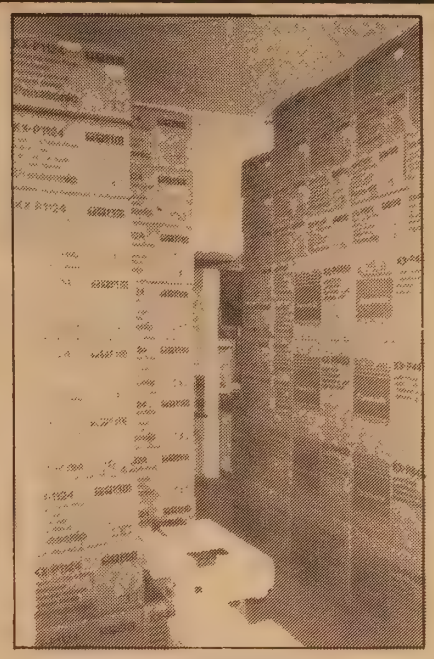
- CORPORATE ACCOUNTS WELCOME
- 3 YEAR WARRANTY AVAILABLE ON ALL EPSON

LOTS OF

Panasonic

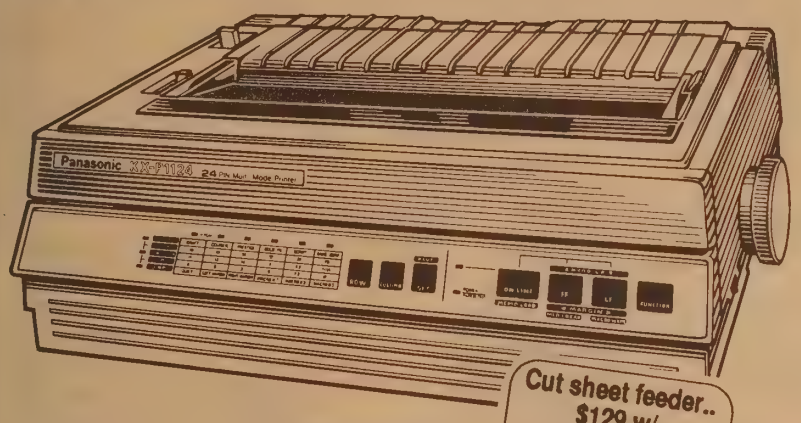
AT YOUR ACCESS!

IF YOU'RE LOOKING FOR A PANASONIC PRINTER, YOU OWE IT TO YOURSELF TO SHOP AT ***ACCESS COMPUTER TECHNOLOGIES***. WE USUALLY STOCK HUNDREDS OF THESE FINE,RELIABLE PRINTERS. WE'RE ALSO A FACTORY-AUTHORIZED PANASONIC REPAIR STATION! WE ALSO OFFER UP TO **4 YEAR WARRANTY** OPTION ON PANASONIC



WE STOCK HUNDREDS!!
....Plus lots of ribbons & accessories.

KX-P1124

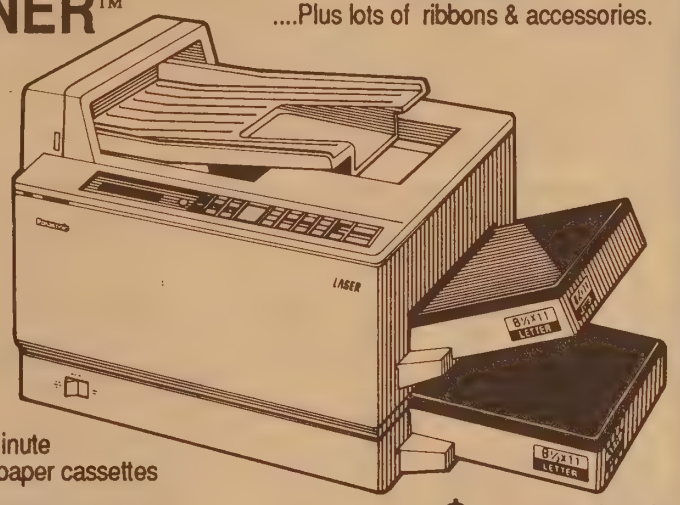


Cut sheet feeder.. $129 w/ 1124 purchase SAVE $40!

- "EZ-Set" Front Panel controls over 20 Functions!
- 24-Pin for True Letter Quality
- 192cps
- 63cps LQ
- 5 Resident LQ Fonts
- Combines over 5500 Type Styles!
- Rear, bottom, & front feed paper paths
- 360x360 dpi
- 2 year warranty

$329

LASER PARTNER™



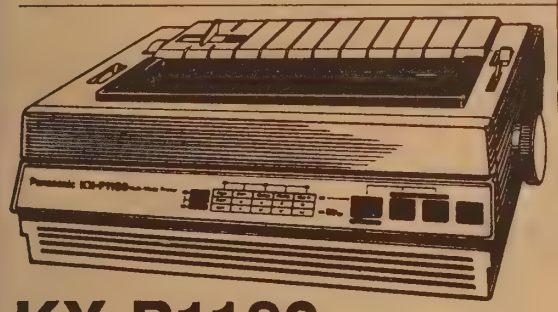
- 11 Pages per minute
- Two 250 sheet paper cassettes
- 300 dpi res
- Five popular emulations
- Front panel controls
- 512K RAM

$1299

- Optional on-site warranty and/or extended warranty available

CONSUMER ALERT!

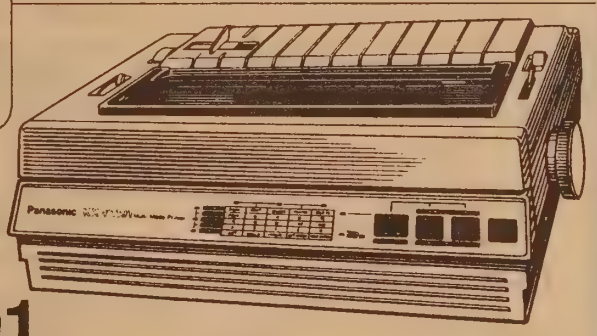
You can buy PANASONIC almost anywhere, but you can't get it serviced everywhere.
ACCESS **COMPUTERS** a factory-authorized **PANASONIC SERVICE CENTER** for Dot-Matrix & Laser printers.



KX-P1180

- "EZ" Front Panel Controls over 11 Functions!
- 192 cps
- 38 cps NLQ
- 4 Resident NLQ ,& 2 DRAFT Fonts
- Combines over 3400 Type Styles!
- 240x216 dpi res.
- Paper park
- Adjustable Push/PullTractor
- 11.7" Carriage
- 2 year warranty

$189



KX-P1191

- "EZ" Front Panel Controls over 15 Functions!
- 240 cps
- 48 cps NLQ
- 4 Resident NLQ ,& 2 DRAFT Fonts
- Combines over 4600 Type Styles!
- 240x216 dpi res.
- Paper park
- Adjustable Push/PullTractor
- 11.7" Carriage
- 2 year warranty

$239

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- **1024 Line Items to choose from!!**

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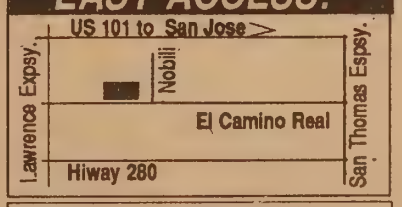

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We're sharpening our pencils for this event!

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• **FREE MODEM** with every Desktop Computer • **FREE PAPER** with every Printer

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2MB PIGGYBACK with 0 K. $69

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all With 2 Year Warranty

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386's with up to 8MB Capacity!

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286 All Baby Size

16MHz	ØK	339
12MHz	ØK	269
10MHz	ØK	239

• 0% Interest
• No $$$ Down
• No payments
'til Dec '89

Diskettes DS / DD 5.25"
Box of 10
$2.99
Limit 10 boxes

EVEREX
TAPE BACKUP

IT'S LIKE A SPARE TIRE... DON'T GO FAR WITHOUT IT!

- Save Time
- Save Headaches
- Save Diskettes
- More reliable than a hard disk

WANGTEC 125MB INT $899
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PACKAGE DEAL

SONY

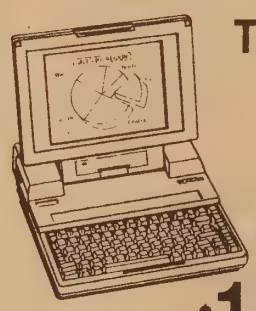
SAVE $49 !

Genoa SYSTEMS CORPORATION

- SONY 1304 MONITOR
- 1024 X 768
- GENOA SUPER VGA 16-BIT CARD
- IF PURCHASED SEPARATELY..$1048

$999

TOSHIBA



T 1200

$1299

2400 BD Modem $349
Carry case 49
External Floppy Drive 179

EPSON

"EQUITY LT LAPTOP" 10MHz

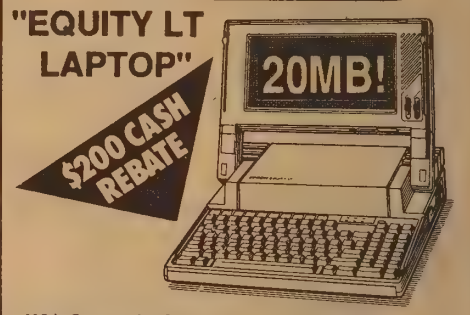
With Supertwist Screen,2 FDD's, LAPLINK PLUS, DOD 3.2,640K RAM, & much more!

$899

External 5.25" FDD.....$179

EPSON

"EQUITY LT LAPTOP"



With Supertwist Screen,20MB HDD,1 FDD, LAPLINK PLUS, DOD 3.2,640K RAM, & much more!

Net prices after factory rebate **$1349**

External 5.25" FDD.....$179

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PARADISE
WITH 3 YEAR WARRANTY!

PROFESSIONAL

- 512K Memory
- 640 x 480 in 256 Colors

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Save $60!

VGA PLUS 16 w/ FREE T SHIRT $269

VGA PLUS $205
- 800 x 600 in 16 Colors
- 132 Column Text Mode

Save $50!!!

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#1 Rated 16-Bit VGA Adaptor!

InfoWorld 5/89

Pro Designer PLUS w/512K 1024x768 $349

ProDesigner 269

VGA 800..0 wait ! 169

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NEC MULTISYNC XL $1999 — 19"

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SONY — 14" all have .25 fine dot pitch

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GOLDSTAR EGA	329
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HARD DRIVES

MINISCRIBE 112MB ESDI 17ms! with Controller $1099

72MB 6085 28ms	549
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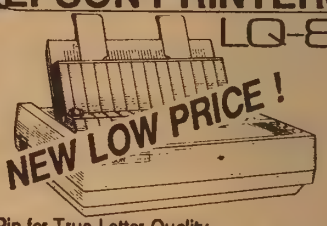
TEAC 5.25"	1.2MB	88
TEAC 5.25"	360K	68
EXTERNAL 5.25" 360K for TOSHIBA & EPSON LAPTOPS		179

EPSON PRINTERS

LQ-850



- 24 Pin for True Letter Quality
- 264cps;88cps LQ
- 360 x 360 dpi
- Paper Park • Push Tractor
- 80 Column • Quiet operation

$549

LQ950	264cps,88cpsLQ,110col	$589
LQ1050	264cps,88cpsLQ,136col	769
LQ2550	The Ultimate! 7 Colors	969
DFX5000	533cps!	1495
FX1050	264cps,54cpsNLQ,136col	479
FX850	264cps,54cpsNLQ,80col	375

EPSON-to-MAC

Printer interface & software
Use your EPSON 24 Pin Printer with your MAC **$69**

FREE 500 Sheets of Paper with printer purchase

TONS of PAPER!!!

80 col	500 Sheets	$9
80 col	1000 Sheets	$12
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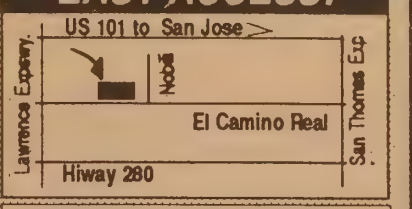

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MODEM MADNESS

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2400 BD External

$139

OTHER MODEMS

CYGCOM 1200BD Int.	$39
EVEREX 1200BD Int.	59
EVEREX 2400BD Int.	129
PARCORP 1200BD Ext.	99
HAYES 9600BD Ext.	895

SPECIAL PURCHASE !

All include BitCom Software

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1200 BD External	79
2400 BD External	129
2400 BD Internal MNP5	169
2400 BD External MNP5	199

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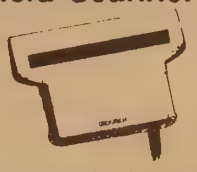
ScanMan™
Hand-Held Scanner



A fast, economical, & convenient way to add the polished look of images to your documents

- Adjustable 100-400 dpi Resolution
- Extended Editing Utilities
- Improved Photo Scanning
- Includes "PaintShow Plus

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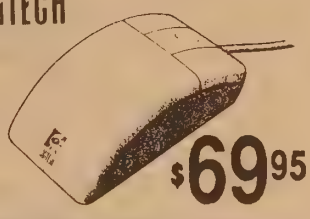
NEW SERIAL MOUSE SERIES 9



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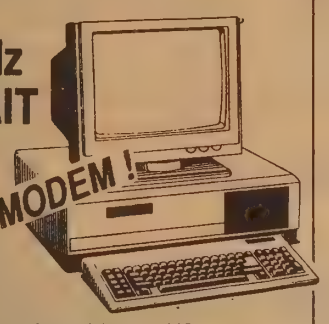
- Perfectly tuned resolution provides the best handling ever in a mouse
- Adjustable resolution...50-19,200 dpi
- "LogiMenu" mousifies any software program
- "Mouse-2-3" increases LOTUS 1-2-3 productivity
- Easy installation

ACCESS

286
12MHz
0 WAIT



- 512K Memory...Expandable to 4MB
- FDD/HDD Controller
- Teac 1.2 MB Floppy Drive
- AT-Style Keyboard
- Amber Monitor

$799

With VGA Monitor & card.....$1399

ACCESS

40MB 286 System
10MHz

- 512 K Ram ...Expandable 1MB
- Miniscribe 40MB HDD
- 1.2MB FDD
- AT-STYLE KEYBOARD
- Amber Monitor

$999

MYLEX

386
20MHz

FREE MODEM !

- MYLEX 20Mhz Motherboard
- 1MB RAM... expandable to 8MB!
- 64K Cache Memory
- I/O Parallel & Serial Ports
- Supports 3.5" Drives ..up to 1.44MB
- Enhanced Keyboard
- Monitor not included

$1799

MYLEX

386
25MHz
128K CACHE!!!

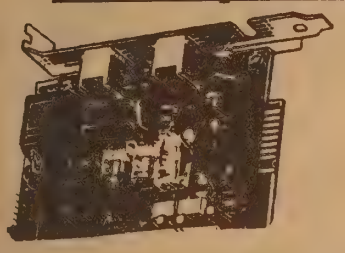
FREE MODEM !

- MYLEX 25Mhz Motherboard
- Weitek support
- 6 Drive bays
- 1 to 1 Interleave controller
- 1MB RAM... expandable to 8MB!
- 128K Cache Memory
- I/O Parallel & Serial Ports
- Supports 3.5" Drives ..up to 1.44MB
- Enhanced Keyboard

$2399

TheComplete PC

The Complete Fax

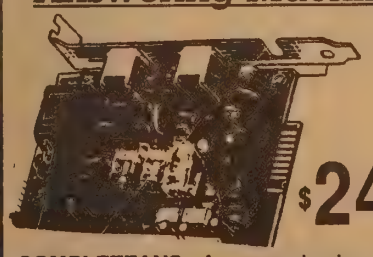


FAX 4800 4800 BPS ...allows continued use of PC for other work while you send & receive from any group III FAX machine

- On-screen FAX receiving notification
- Automatic cover sheet
- Can scheduele calls

$269

The Complete Answering Machine



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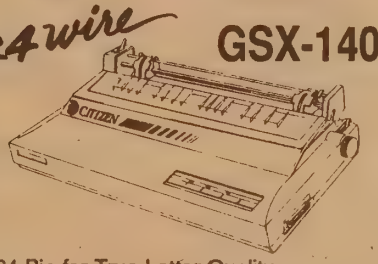
COMPLETEANS...A personal voice mail system for a PC. Answers & forwards messages while your PC is in use for other work. Includes multiple password-protected voice mailboxes.

CITIZEN™

24 wire GSX-140



- 24 Pin for True Letter Quality
- 192 cps; 64 cps LQ
- LCD Front Panel Displays
- Color Option Available
- 2 Year Warranty

$349

star micronics

NX-1000 "Rainbow"

- 7-color printouts
- 8 Built-in NLQ Fonts
- 144cps; 35cps NLQ
- Paper park
- Tractor & Friction Feed
- Proportional printing
- Push-button control panel

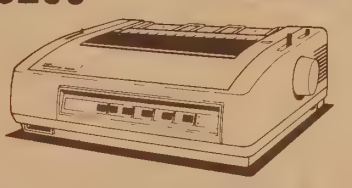
$249

NX-1000..non-color $165

NEC

ALL 24 PIN

P5200

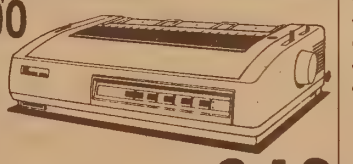


- Very black Letter Quality Printing!
- Up to 265 cps; 90cps LQ
- Up to 360 x 360 Res.
- Color Option Available

$489

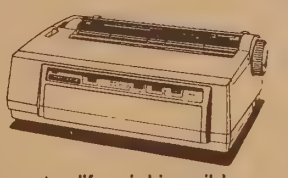
P5300

wide carriage version



$649

P2200



- 3-million character lif re-inking ribbon
- 5 paper and forms handling capabilities.
- 48 resident type fonts
- 24 wire print quality
- 265 cps draft; 90 cps LQ

$319

LASER PRINTERS

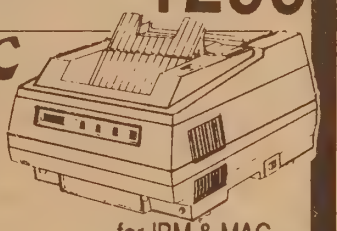
Panasonic

LASER PARTNER

- 11 Pages per Minute!!
- Two 250-Sheet Paper Cassettes
- 300 dot-per-inch Resolution
- Five Popular Printer Emulations
- Front Panel Controls
- 512K RAM

$1299

NEC LC890 POST-SCRIPT



for IBM & MAC w/ 3MB

$2999

H P LaserJet II $1649

1MB EXPANDABLE to 4MB $269

writing up 50 or 100 disks was daunting—today the combined disk Library is around 400 diskettes!

The first part of this project got off the ground last summer with *BMUG On HyperCard,* a book that described the stacks in our Hyper-Library. Finally the second installment has hit the stands — *the BMUG Disk Catalog.*

This 400 page opus, the *Encyclopædia Britannica* of Mac shareware, covers all non-*HyperCard* programs, DAs, fonts, sounds — everything. The Catalog's editor, Greg Dow, is the leader of the BMUG Developer's SIG. He included a brief description and review of each and every program contained in our 250+ disk Main Library. There are 36 disks worth of fonts, 14 disks of Utilities, 53 disks of Games and much more. For those of us more visually oriented, each program's icon is displayed. Icon dig it!

The price is also too good to be true. It's only $5 if you can pick it up in person and $8 by mail.

• Don't expect to see your mail carrier for a while. They'll have to spend a day or two recuperating from carrying the latest issue of the BMUG Newsletter. For those of you not BMUG members, here's the word.

A year's worth of BMUG membership includes our fantastic 400+ page Newsletter, published twice yearly. This issue is filled with articles on every facet of Macintosh life, with a special area on Mac Aided Design, which may be the most complete review of Mac CAD software ever to appear in print..

• Check out the BMUG booths and say hello to fellow members at a couple of special upcoming events:

Seybold Computer Publishing Exposition at Moscone Center, San Francisco, September 21–23.

AppleFest '89 at Brooks Hall, San Francisco, September 22–24.

Mac Business Show November 29–December 1, Long Beach, California.

Shareware Spotlight

Remember the promises you made to yourself at the beginning of the summer? You were going to learn a West African dialect and read several of the thick tomes you skipped while putting in your diploma time—Right? But the summer got away from you. Never fear, there's hope.

• If you need to drill anything, you'll like *VocabQuiz 1.4* from Mike Gleason Jr. of Omaha, Nebraska. This program allows you to create drill lists of 25 words and definitions. It automatically keeps a tally of right and wrong answers, percentage and even letter grade. *VocabQuiz* comes with a bunch of prepared examples, including the world's capitals and SAT English drills.

The icon of the program is fantastic too, portraying a skull with a diploma gripped in its teeth and a pasteboard on its crown. The shareware fee is only $1. *VocabQuiz* is on BMUG *Education 15* disk.

• Music majors, minors and groupies will appreciate *Ear Trainer 1.2* by Lawrence Gallagher at Dartmouth. This program drills chords and intervals, every which way and inversion. It is very flexible and allows you to concentrate on particular problems, or get creamed by everything at once. There's a $10 shareware fee. *Ear Trainer's* on BMUG *Education 9* disk.

Apple dealers were a bit fried in late June, when they received word that they might be infected with the nVIR virus. How would they know this frightening bit of news? Mother Apple sent out the diseased software! Oooops...

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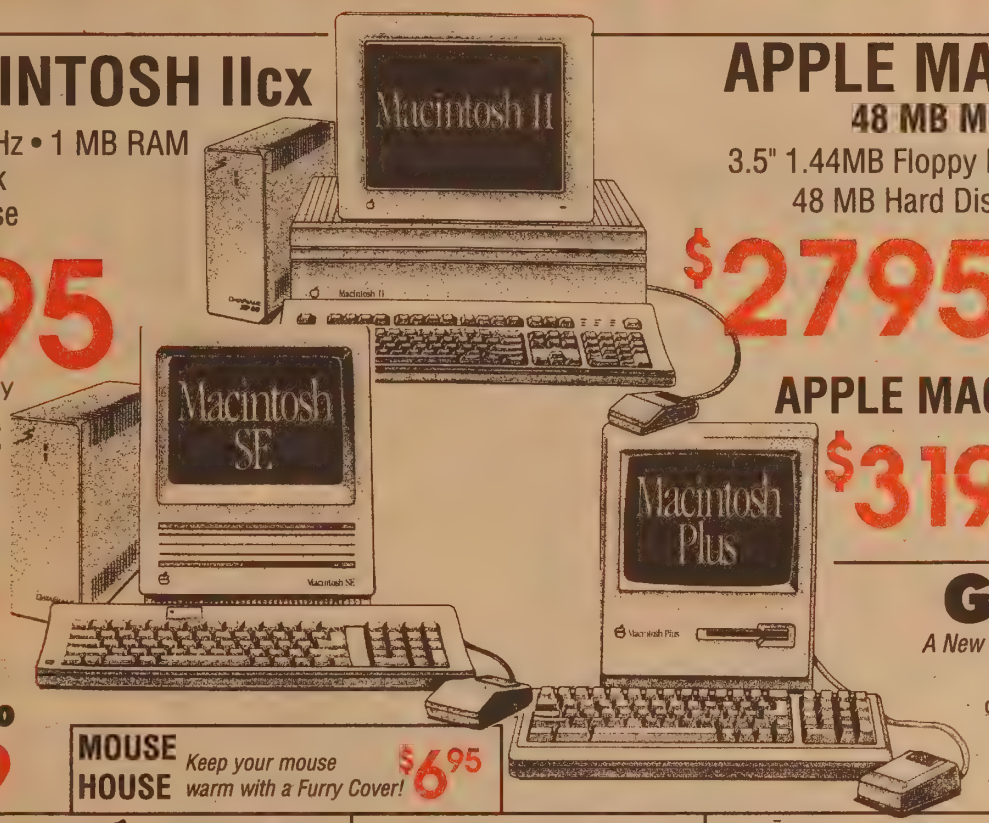

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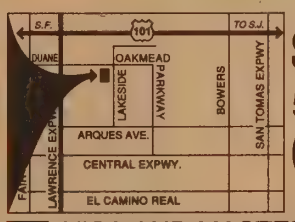

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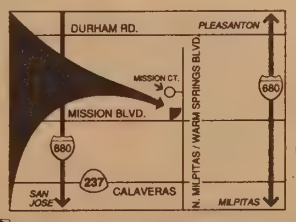

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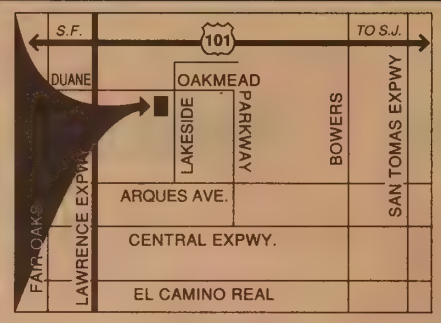

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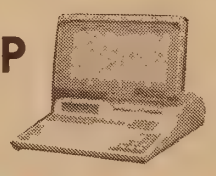

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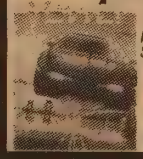

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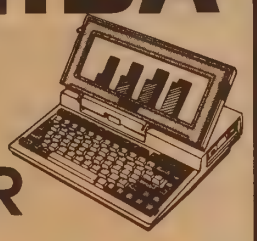

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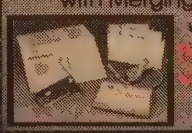

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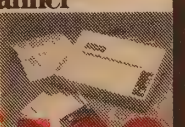

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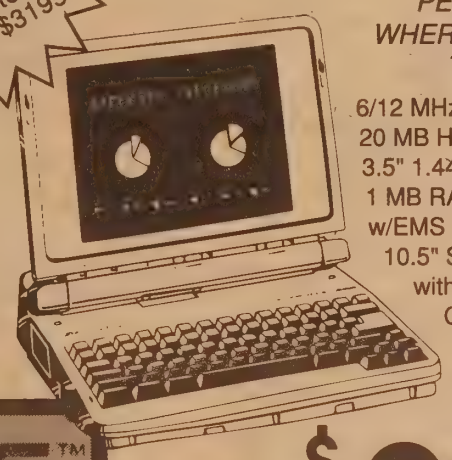

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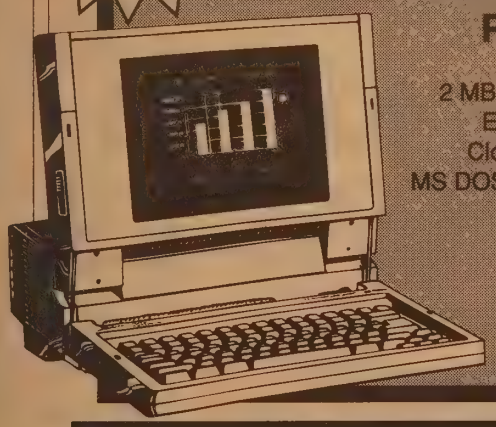

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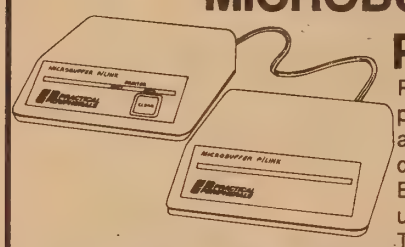

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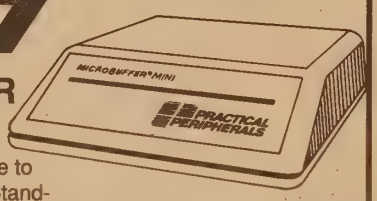

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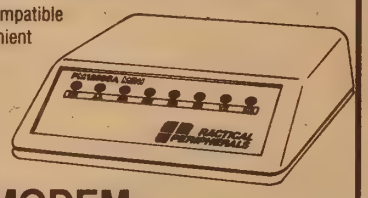

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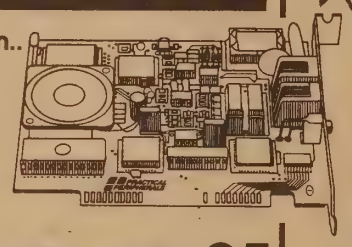

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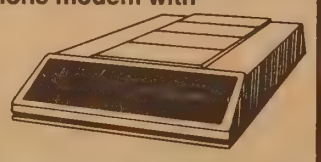

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Hayes Compatible ProComm™ Software

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MNP LEVEL 5

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2400 bps Modem, MicroPhone, Cable, and a price that makes it all worthwhile
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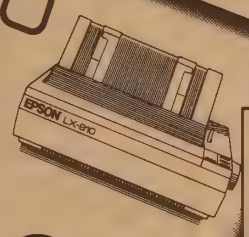

9 pin
80 Column
200 CPS Draft
30 CPS NLQ
SmartPark Paper Handling
Opt. Multi-Font Cartridges

$199

HIGH SPEED
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Run an Epson 24 pin printer on a Macintosh

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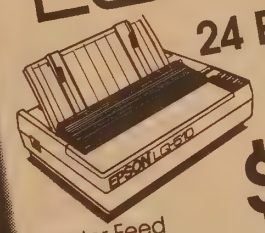
LQ-510
24 PIN PRINTER
Letter Quality at an Outstanding Value



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180 CPS Draft
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360x360 DPI Graphics
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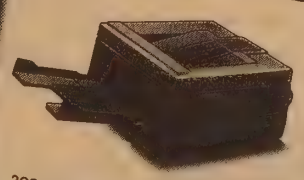
EPL 6000



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Compatible with popular cartridge and soft fonts
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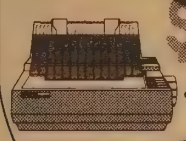
FX-850
9 PIN PRINTER • 80 COLUMN • 264CPS Draft
54 CPS NLQ • SelectType • SmartPark Features



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SERIAL OPTION
RS232 Upgrade for Epson JX, LX, FX, RX, MX & LQ printers

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12 MHz 286
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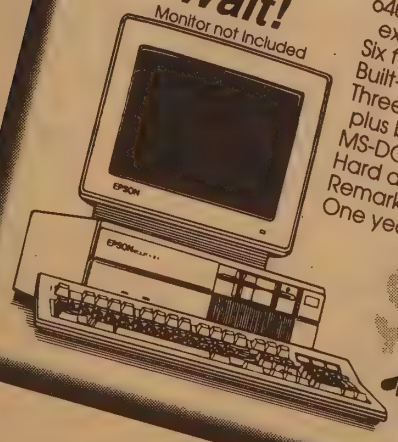
Monitor not included



8/12 MHz 80286
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640KB RAM memory, expandable to 15.5 MB
Six full-size expansion slots
Built-in serial and parallel ports
Three half-height mass storage slots, plus built-in floppy disk drive controller
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Remarkably compact design
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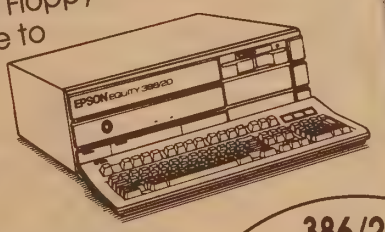
EQUITY™ 386/20
Powerful 20MHz 80386
Standard 5 1/4" 1.2 MB Floppy Disk
1 MB RAM expandable to 16 MB using SIMMS
Serial/Parallel Ports
Clock/Calender
MS DOS Compatible
OS/2 Compatible
One Year Warranty



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386/20
42 MB MONO SYSTEM

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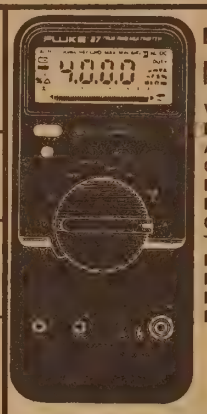

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VOLTS, OHMS, DIODE TEST, AUDIBLE CONTINUITY, FREQUENCY AND DUTY CYCLE, CAPACITANCE, TOUCH HOLD, RELATIVE MODES. PROTECTIVE HOLSTER WITH FLEX-STAND

0.1% basic dc accuracy. 20 khz acV. High resolution analog pointer. True RMS ac, 1 ms PEAK MIN MAX 4 1/2 digit mode. Backlit Display. Three year warranty. **$259**

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8087 PC/XT	$95 5/6 MHz	$135 8 MHz	$179 10 MHz
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256K
120 N.S. **$3.49**
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30 AWG (.025mm) Insulation diameter .0195" (0.50mm)

Roll sizes
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5% 1-4 CASES
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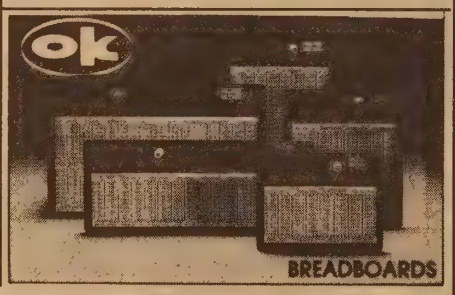

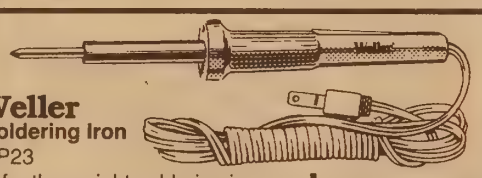

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SP23
A featherweight soldering iron with replaceable tip and pencil handle **$7.99**

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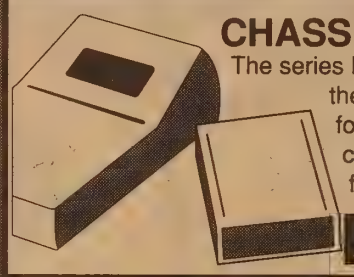
CM280	1855	320	28	6 1/4"Wx7 1/2"H	$41.99
CM140	970	160	14	6 1/4"Wx5"H	$22.99



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3 Volume Set
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MANY DIAMETERS IN STOCK
WIDE SELECTION
COMPETITIVE PRICES

Xcelite $17.49
Nutdriver Set PS120
Inch sizes with color coded handles.
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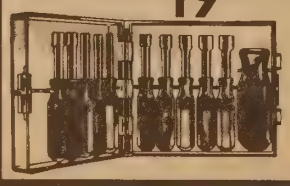

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91CG
Miniature electronic pliers with blue cushion-gip handles **$13.99**
Xcelite

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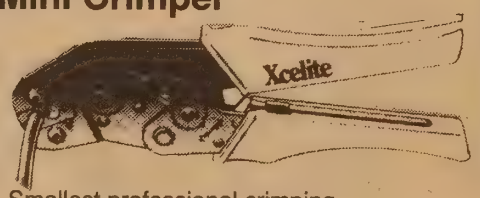
Mini Crimper



- Smallest professional crimping tool of it's kind
- Angled jaws for comfort
- Ratchet ensures a full-cycle complete crimp every time

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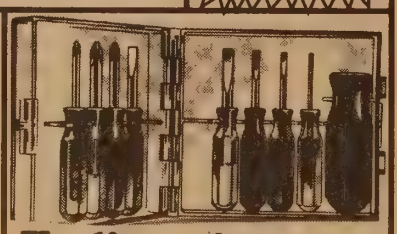
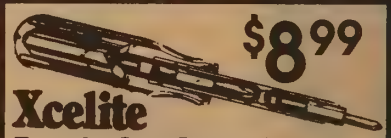


Xcelite $14.99
Screwdriver Set
PS-88
Compact set with color-coded handles.



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For the person who demands quality and appreciates convenience

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Tough steel shafts with firm grip plastic handles. 6 popular sizes.

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- 5 Page Automatic Document Feeder
- Confidential Transmission
- Relay Broadcast Request
- Halftone Control
- 18 Second Transmission Speed
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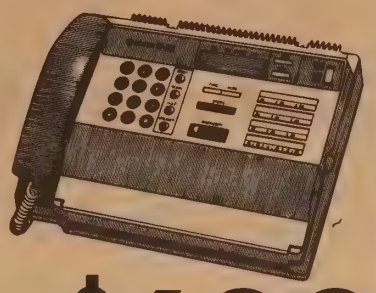
- Commercial Quality Construction, Features



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Fax, Phone & Copier

- Half-tone reproduction
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- 17 second transmission Speed
- One touch Autodial to 10 stations
- Polling
- Header Print

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FAX PAPER
6 ROLL Pack
8 1/2" x 98"
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SmartMax

- 2-Year Warranty
- 24-Hour Customer Service Line
- Made in the U.S.A.
- UL Approved and FCC Certified

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Facsimilie with Answering Machine Built-in

- Combined Answering machine, integrated telephone features & Facsimilie
- Automatic Telephone/FAX Switching
- Copier Function
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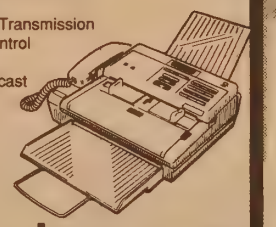
- 10 Station Autodialer
- OGM Chip
- Beeperless Remote
- Speaker Phone

$848 model KX-F80

SHARP FAX
Phone & Copier with Relay Broadcast

- 32 number autodialer
- Automatic Paper Cutter
- Auto-Redial
- Confidential Transmission
- Half-tone Control
- Polling
- Relay Broadcast
- Delay Send/ Polling



$1149 model FO-330

model m-740V
SONY.
MicroCassette Recorder

- Ultra-small size fits in pocket
- One-touch recording
- Instant edit
- Automatic shut-off

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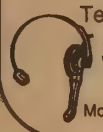
Telephone Headset For Electronic Telephones



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Model SP-03

Panasonic
Personal Word Processor

- 56,000 character text edit memory and 2,000 character memory for 20-phrase storage
- 3.5-inch floppy disk drive
- 9-inch (80 chr. x 25 line) CRT Display
- Letter quality Daisywheel printing element
- 12 inch paper capacity (10-inch writing line)
- Built-in Accu-Spell Plus corrects spelling with apprx. 63,000 word dictonary plus user dictionary (apprx. 120 words)
- Mail Merge and Mail List functons
- Word Search and Next Word Search, World Replace, Word Wrap, Format Memory, Memory Quantity
- Automatic Bold, Undrline, Centering, Paragraph Indent, Decimal Tab, Right Margin Flush and Carriage Return
- Typewriter, Line-by-line and Justify printing modes
- Lift-off correction with one-line memory
- Full-size/International keyboard (KBI/KBII)
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HP-10B	$39.95
HP-14B	$67.95
HP-17B	$94.95
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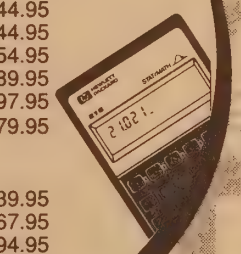


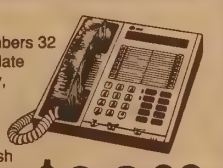
Panasonic
Telephone with Auto-Dialer, Speakerphone & LCD Display

- 12 Digit LCD Read-out for phone number, clock, call Timer and operation modes.
- Built-in Speakerphone
- 28 Station Auto-dialer
- Automatic Redial up to 15 times
- Electronic Hold
- Mute Button for Privacy

$69.99 model KX-T2365

AT&T Speaker Phone 480

A stylish, "hands-free" speakerphone that remembers 32 numbers. Features time/date and number dialed display, automatic redial of busy numbers, selectable touch-tone or rotary dialing, hold, mute and flash features lighted dial buttons and more. Table/wall convertible and hearing aid compatible.



$89.99

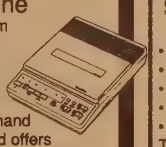
Panasonic
Two Line SpeakerPhone with Conference

- Hands-free speakerphone with mute and hold
- Separate LEDs and ringer switches for each line
- One-touch automatic dialing for 28 numbers plus 20 speed-dialing numbers
- Switchable tone/pulse settings for compatiblity with tone-accessed long distance services

model KX-T3145
$89.99

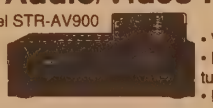
PHONE-MATE
2 Line Answering Machine

Today's Active Person demands a lot form life. That's why Phonemate designed the perfomance Series 7400. This unit is perfect for the person with two seperate phone numbers. Voice Assisted Operation assists with easy set-up, command confirmation, simple remote operation and offers voice Time/Day Stamp. This unit also features One Touch Operation, Personal memo, remote greeting change and announce only.



$129.99 model 7400

SONY. 100 Watt
Audio/Video Receiver
model STR-AV900



- Video edit (2 video in)
- Direct comparator tuner (99 presets)
- Dual power supplies
- 100 watts per channel
- 7-band graphic equalizer
- Music index (8 presets)
- Spectrum analyzer
- Audio\video remote control

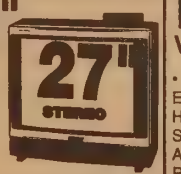
$349

Panasonic HQ VHS HiFi Stereo VCR 4 HEAD
with Flying Erase Head

Panasonic's new 4 Head, HiFi Stereo VCR is loaded with Features with-out a loaded Price. This unit Features a Flying Erase Head for perfectly clean edits between commercials or when dubbing Home Videos. Other Features include MTS, HiFi Stereo, Audio/Video Dubbing, Synchro Edit, On Screen Programming, Unified Remote control and to many other features to mention.

$499 model PV-4960

SONY. 27"
STEREO Trinitron TV



- Trinitron MicroBlack® picture tube
- Dual built-in stero speakers
- Stereo broadcast reception
- Direct video/Audio input
- Cable-compatible Express Tuning® system
- Auto timer/channel block
- Auto channel programming
- Space-saving compact consolette design

$699 model KV-27TS20

Panasonic
VHS Camcorder/HQ

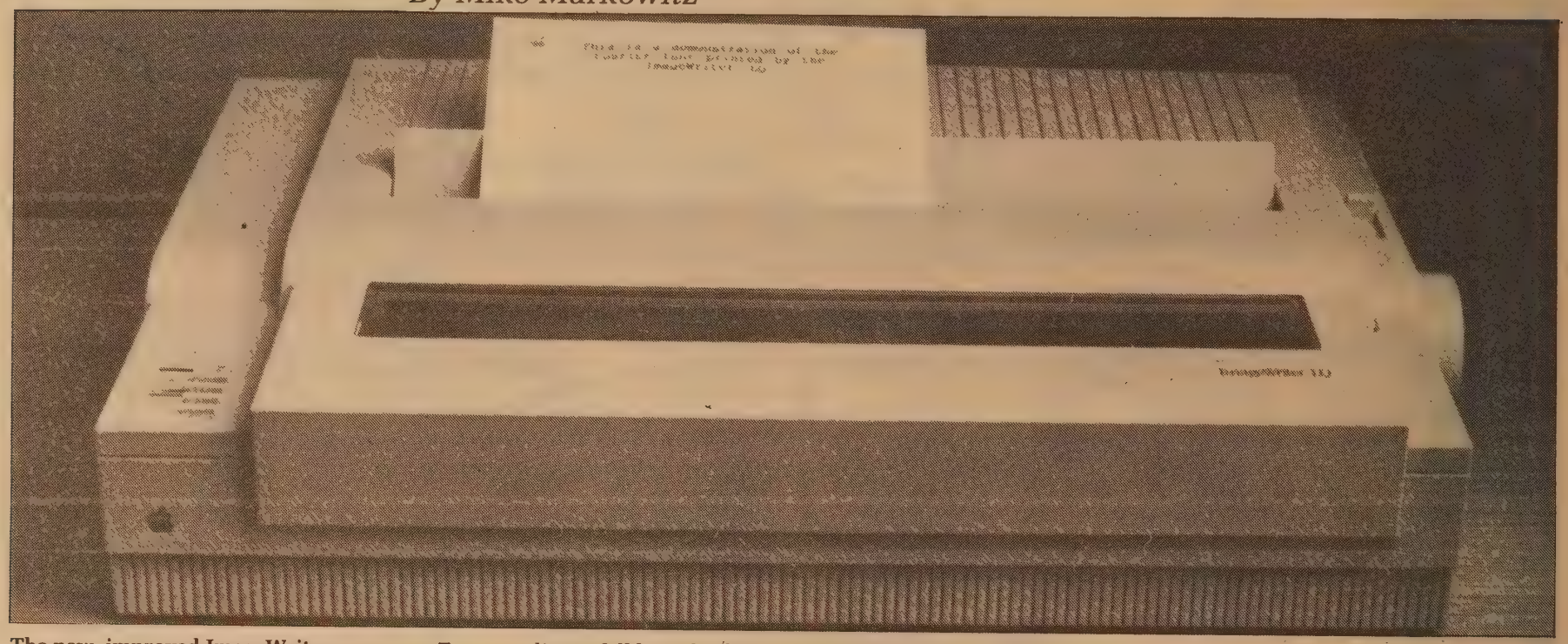
- Small/Lightweight • Flying Erase Head • Right or Left Hand Operation • High Speed Shutter (1/1000, 1/500 sec) • A/V Dubbing • Low Light Recording • Time-Lapse/Self-Timer Recoding • 6:1 Power Zoom/Macro • Edit Search • VHS Index System • Infared Auto Focus

model PV-500
$899

HOW THE PRINTER FROM HELL GOT WELL

The Rebirth of the ImageWriter LQ

By Mike Markowitz



The new, improved ImageWriter LQ offers letter-quality output to Mac and Apple II users.

According to folklore, the dot-matrix printer (DMP) was developed for the 1964 Summer Olympics in Tokyo to rapidly crank out reams of results and statistics for every event. High-speed printers that require a separate element for each letter may be workable for Western alphabetic languages, but Japanese, with its hundreds of characters ("Kanji"), demands a different solution. Japanese firms, such as Epson, Toshiba, and C. Itoh have always dominated the dot-matrix printer market, and competition has pushed the technology to impressive heights of performance at lower and lower cost.

Apple's ImageWriter DMPs are assembled from components made by Toshiba. Dependable but overpriced, the ImageWriters work equally well with the Macintosh and Apple II families, and can be networked by snapping in a $129 LocalTalk card.

The introduction of the LaserWriter in 1984 raised everyone's expectations about computer printout quality, and created a huge gap between the high-end and low-end Apple printer solutions. Where there's a gap, there's a market, and so the ImageWriter LQ was born. Born under a bad sign. One engineer who worked on the project reportedly described the LQ as "the printer from Hell."

LQ means "letter quality." Other letter-quality DMPs have 24 pins in the print head, but the LQ has 27. This makes for a neat threefold multiplier, since the original ImageWriters have nine pins. The LQ was designed to print at 216 dots per inch (dpi), exactly three times the Macintosh screen resolution of 72 dpi, but still well below the LaserWriter's 300 dpi. The LQ uses memory-hungry triple-sized fonts—if you have 12-point text on the screen, the printer actually uses the bit-image of a 36-point font. With a 15-inch carriage, the LQ is the only Apple printer that can handle traditional wide "computer paper"—the old wide-carriage ImageWriter I was discontinued several years ago.

With a list price of $1,399, the LQ was intended as a heavy-duty corporate asset. But its liabilities quickly became apparent. As Harry Anderson joked at a recent MacWorld Expo, "The ImageWriter LQ prints 216 dots per inch—in no particular order." Print quality, particularly in the upper and lower areas of a page, was erratic. The noise level was incredible. There was a bewildering variety of paper-feed setup options, some more likely to jam than others. The initial printer driver for the Macintosh had letter-spacing bugs, and the driver for the IIGS was just an emulation of the ImageWriter II. Although the LQ, like the ImageWriter II, supports a four-color ribbon option, most users are disappointed by the dull, grainy, jagged appearance of dot-matrix color output.

The ImageWriter LQ makes sense as a network printer in a few applications where a three-bin sheet feeder or envelope attachment would be cost-effective.

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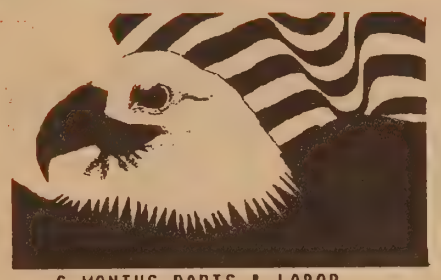

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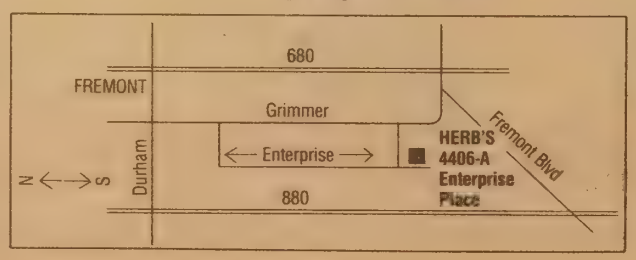

VISA

The New, Improved LQ

In its younger days, Apple could afford to write off a badly flawed product as a learning opportunity (the Apple III, the Lisa, etc.). But a mature corporation is expected to fix its mistakes, whatever the cost. Apple fixed the ImageWriter LQ. The ugly duckling has not quite become a swan, but the improvement is dramatic.

Owners who purchased an LQ between August 11, 1987 and March 7, 1989 are eligible to receive a free exchange for the new version (with a renewed 90-day warranty) from their authorized Apple dealer. This is almost like Ford announcing that all Pinto owners can swap for a new Escort. The cutoff between the old, bad IW LQ and the new model comes at Serial No. 183101013; machines with earlier numbers are pre-upgrade. An optional cut sheet feeder has also been redesigned and simplified.

Our office received two of the old LQs, and (as part of a separate hardware procurement) one of the new ones. The only visible external difference is that the paper separator, a wire rack that snaps onto the old printer, was redesigned as a two-part captive device with added curves to improve the flow of paper. The most noticeable difference is the noise level, which has not only been reduced, but also acoustically "retuned" to a (subjectively) less irritating tone.

The LQ uses the same LocalTalk card as the ImageWriter II, and it is even easier to install. A flip-up panel provides access to the DIP swiches, but most users will never need to change the factory settings.

Along with the new printer driver and Font collection, the software packaged with the LQ now includes a well-designed *HyperCard* stack, illustrated with scanned photographs, that walks you through the many different paper feed setup options and printer controls. Nobody ever reads a printer manual, and part of the LQ's poor initial reception may have been due to the unfamiliarity of some of its features. For example, pressing the "Select" and "Form Feed" buttons simultaneously causes the pin-feed paper to roll back out of the platen, so you can friction-feed single sheets without unloading the printer. This neat feature is hidden in an obscure corner of the manual.

One of the unsolved mysteries of the LQ remains: a plastic knock-out on the rear panel of the printer is marked with twin SCSI icons. There is nothing behind the panel. Does this mean that Apple once planned on a SCSI interface (like the LaserWriter II SC) for this printer, and abandoned the idea after the plastic molds were machined? Or is there some SCSI option still waiting to be announced? Or is it all a brilliant deception, a bit of disinformation to discourage other vendors from developing SCSI bus dot-matrix printers? The RS-232 serial interface used by Apple printers is no speed demon, but the parallel SCSI bus is capable of very high speed data transfer rates. Even a serial interface can usually send data faster than any mechanical print head can lay it down on paper, but intelligent buffering can squeeze a lot of performance out of a dot-matrix printer...

Owners who purchased an LQ between August 11, 1987 and March 7, 1989 are eligible to receive a free exchange for the new version (with a renewed 90-day warranty) from their authorized Apple dealer. This is almost like Ford announcing that all Pinto owners can swap for a new Escort.

The ImageWriter LQ makes sense as a network printer in a few applications where a three-bin sheet feeder or envelope attachment would be cost-effective. With a new ribbon and the correct fonts, LQ output looks sharp, but it would never be mistaken for a LaserWriter.(Apple Computer, 20525 Mariani Avenue, Cupertino, CA 95014, 408/996-1010.) ■

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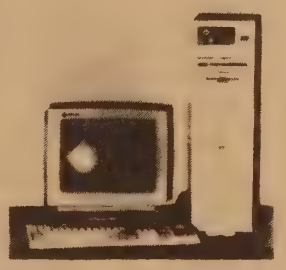

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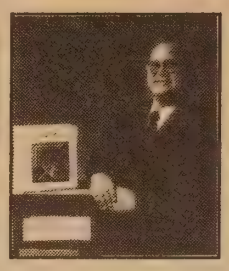

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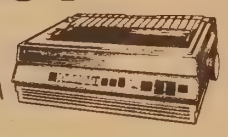

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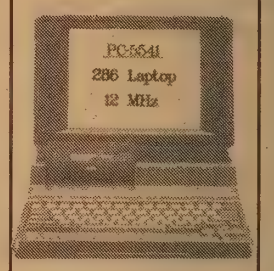

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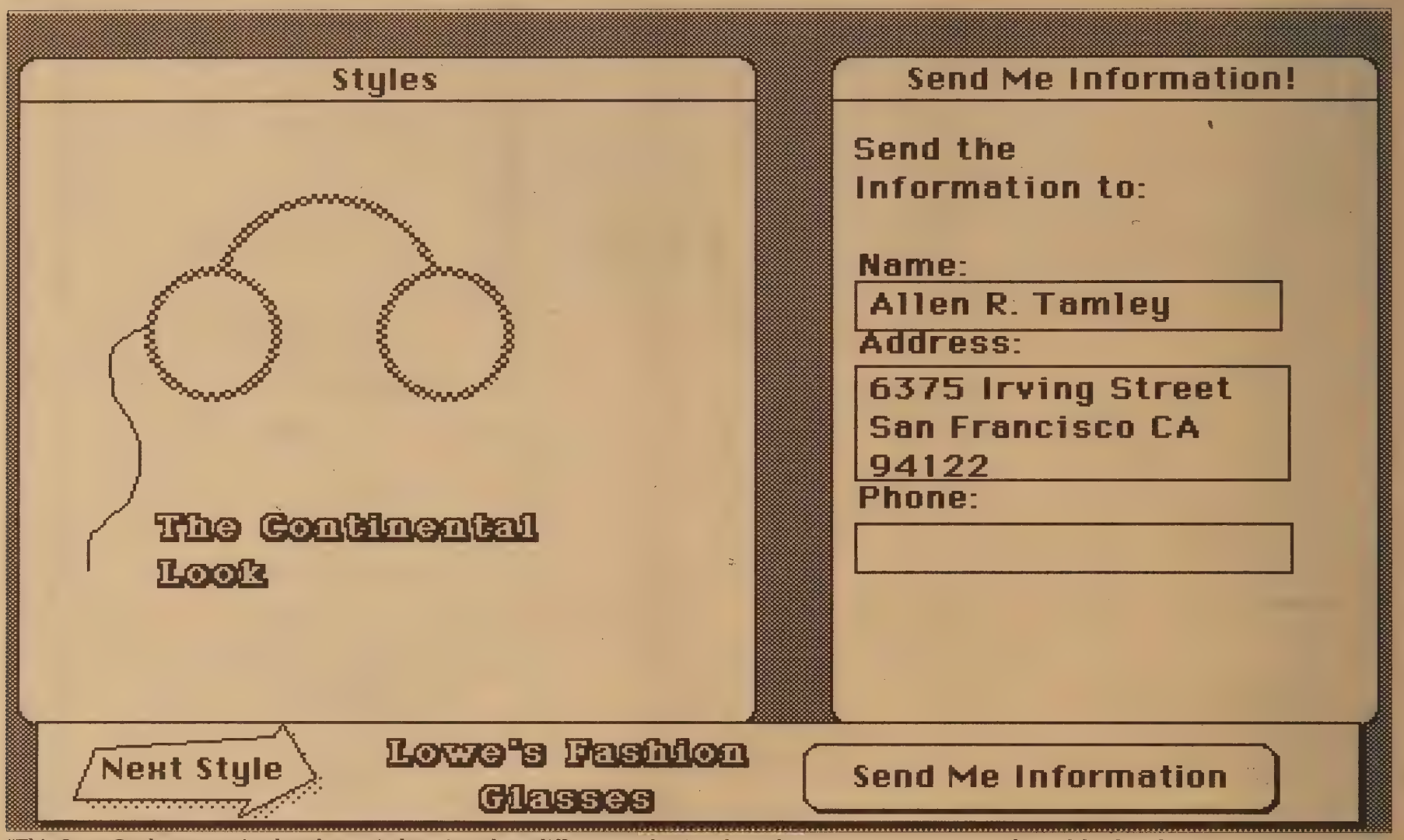
Making A Buck With HyperCard

How You Can Use HyperCard (and Extensions) To Make Presentations For Clients



"This SuperCard presentation has three windows into three different stacks. Two have data; one serves as a control panel for the others."

Having spent time and love learning *HyperCard*, you are probably asking the most human of questions: How can I turn a profit from this? In the next three months we're going to look at specific ways that you can use *HyperCard* and its extensions to make a few dollars as an employee or as an independent contractor.

The first of these is to make presentations for other people. Because you know *HyperCard*, you can design presentations for your company, for clients, and for organizations. You give them a way to present their product and point of view. For that you charge them for your time as a designer. If they do not have a Macintosh to display your stack on, you can rent them yours. You can build stacks for trade shows, for office information systems, or for customers to place orders in a store. You may design a complete sales presentation or a simple interactive questionnaire.

There are two things you and your client both want in your presentations. The first is crashproof reliability. If you build a stack for other people to use, you want it to be *absolutely* trustworthy. You will not be there to repair it if it seizes in the middle of a trade show. You must also design it so users with an experimental turn of mind cannot tinker with it.

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SuperCard

You and your client also want eye-catching graphics, good animation, and full interaction. As a *HyperCard* programmer, you are familiar with how to create those in *HyperCard*. You might consider investing in **SuperCard** from Silicon Beach (9770 Carroll Center Road, San Diego CA 92126, 619/695-6956). It has a barrage of improvements and extensions to *HyperCard*.

SuperCard has multiple stacks onscreen at the same time. It has vector graphics as in *MacDraw*, as well as the bitmapped *MacPaint*-style graphics found in *HyperCard*. It has full color (if you want to use it). It has four kinds of animation available. It has a built-in icon and cursor editor. You can import *HyperCard* stacks. You can design and include your own menus. You can build standalone *SuperCard* applications for distribution without royalties to Silicon Beach. The standalone application is much less vulnerable to tinkering in the field.

There are some costs to *SuperCard*. First, it is not free ($199 of your money). Second, it is more complex than *HyperCard*. You can use almost all of your HyperTalk skills, because Silicon Beach's program is a superset of *HyperCard*. You will need to learn a number of new commands, and you will need to coordinate several simultaneous stacks in separate windows. You will have to learn to use *SuperCard's* color and animation. Learning these new tricks will take time, and you will have to learn them well to guarantee your clients reliability. But it is worth the effort. *SuperCard* is a superior presentation tool.

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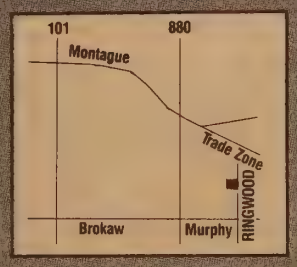

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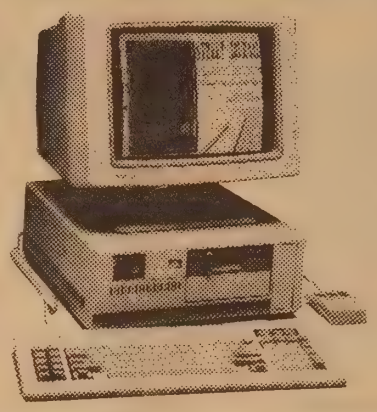

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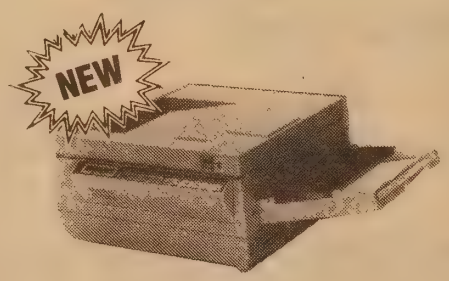

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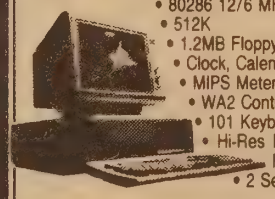

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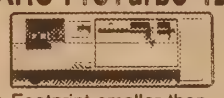

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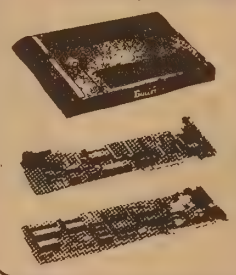

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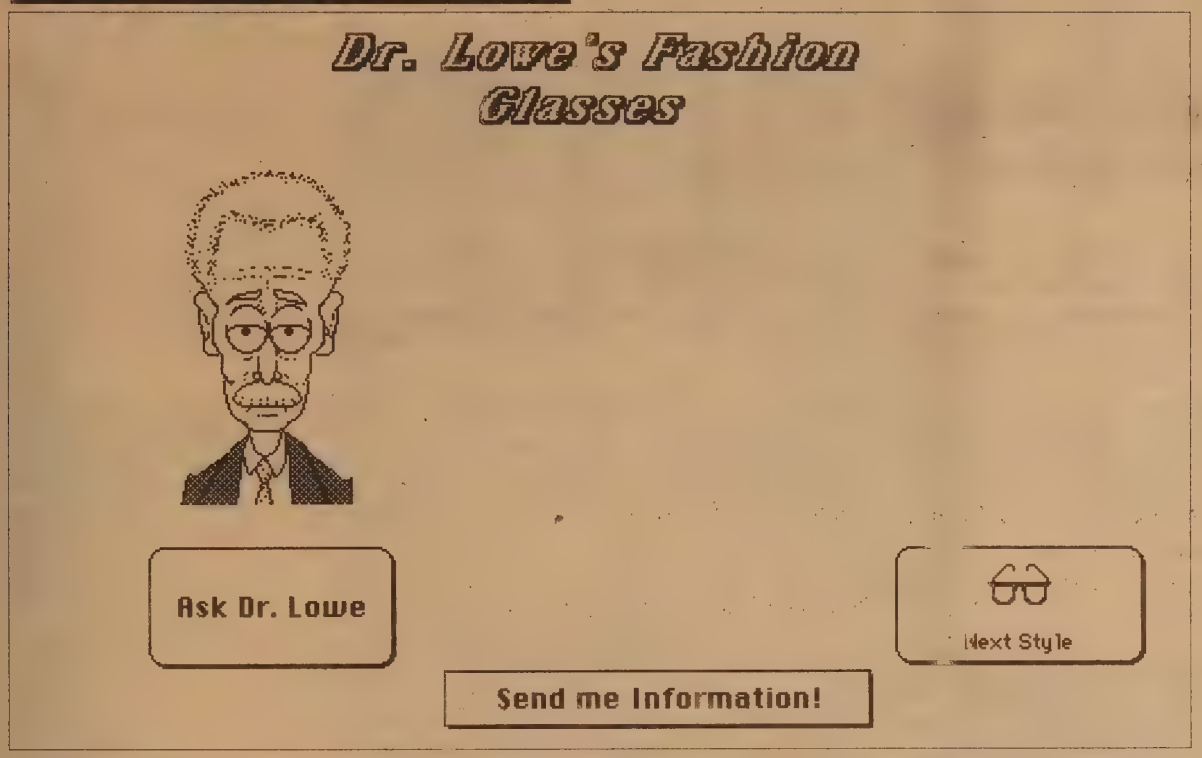

"In this stack with HyperAnimator, Dr. Lowe talks to customers and explains each style of glasses."

HyperAnimator

The Mac talks, thanks to Apple's sound system and their generosity in giving us Macintalk. We are used to applications that talk to us. If you want an even more effective conversation, consider **HyperAnimator** from Bright Star Technologies (14450 NE 29th # 220 Bellevue WA 98007, 206/885-5446). It is a full programming language and animation system for one purpose only: It allows you to include talking faces in your stacks.

You can build cartoon faces from the facial clip-art that comes with the package. You can read digitized faces in with your scanner, or you can use the faces provided with the program. Each face has 16 different positions, one for each of a number of phonemes and several for "silent expressions like winking and smiling. *HyperAnimator* chooses the appropriate face for each sound that Macintalk speaks. You can use any text and get acceptable results. If you use the phonetic codes that Macintalk recognizes, you can improve pronunciation and intonation.

HyperAnimator costs $199.95. That seems like a lot of money for a one-trick pony, but it may be just the trick you need to sell your presentation stacks.

They say one of the first things a child recognizes is the human face. Walt Disney has bought *HyperAnimator* and is using it in a movie. Bright Star tells me that Robin Williams is fond of the product: I can see why. And yes, *HyperAnimator* will soon work with *SuperCard*.

Be aware that *HyperAnimator* is a finicky pony. It crashed my system repeatedly until I figured out that it didn't like the *Talking Moose*. The people I talked to at Bright Star didn't know what the problem was; I had to find it for myself. Budget a bit of debugging time if you include this product in your presentation stack.

How Do You Sell Your Presentations?

First, you build a stack that works well and that you would be proud to use. Then you find people who could use an interactive demonstration of their product, and show them what they could do with a stack like yours. You must customize the stack for them, but much of the stack will be reusable for customer after customer.

"Shucks," you say, "I'm good at *HyperCard*, but I'm too shy to sell my own work." Well, next month we'll talk about people who will sell your stack for you. ■

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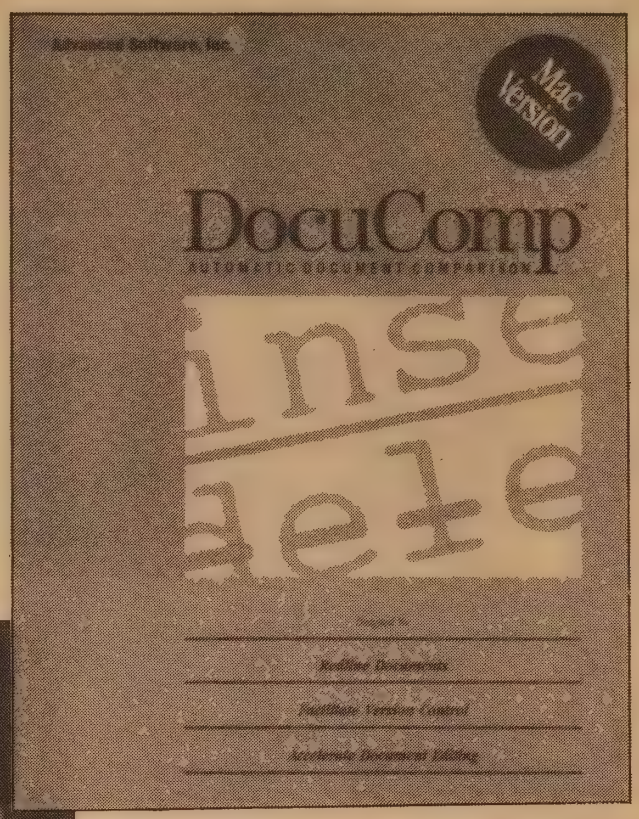
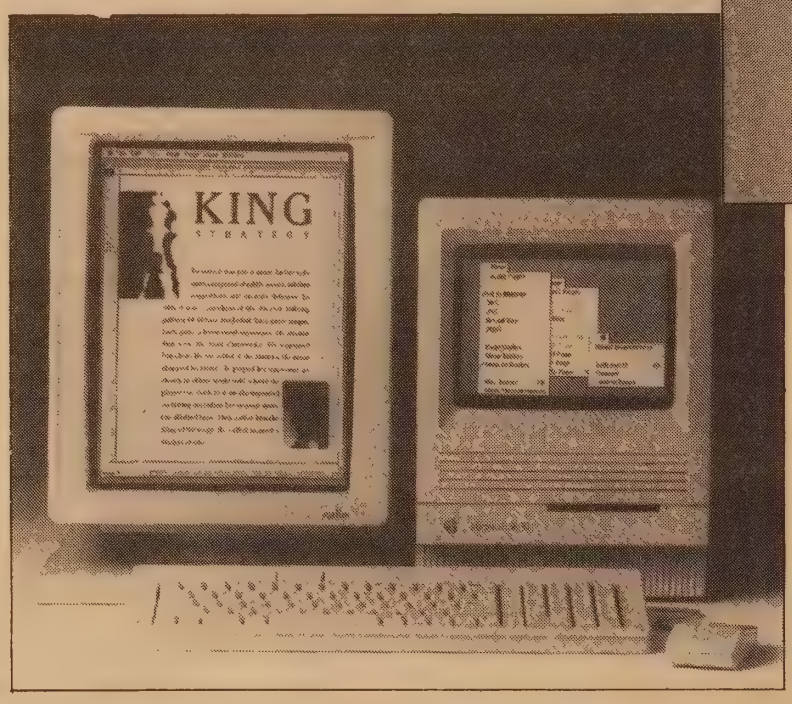
DocuComp is a new application from Advanced Software that allows you to view changes made from one document version to another. If you've revised a book, a contract, a proposal, or even computer source code, *DocuComp* is the only Mac application that can find and report your changes. You supply *DocuComp* with the names of two files (which don't have to be created in the same application). *DocuComp* then uses patented pattern recognition technology to compare one file against the other and identify all of the changes. A variety of screen and print formats allow you to choose the most practical way to present the results. *DocuComp* supports ASCII, *Word*, *WordPerfect*, and *WriteNow*, and will soon include support for *MacWrite*, *More*, and *FullWrite*. ($159.95) Advanced Software, 1095 E. Duane Ave. Suite 212, Sunnyvale, CA 94086. (408)733-0745.

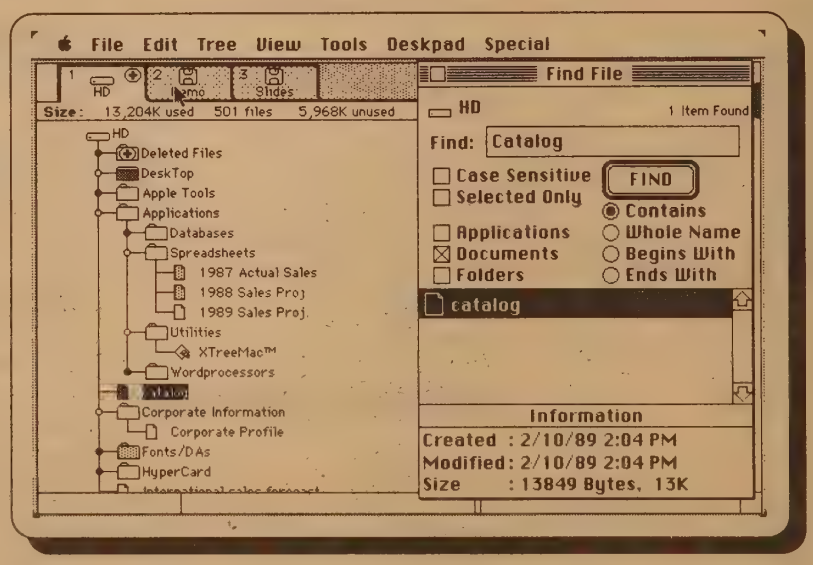




Radius Full-Page Display For The Mac SE/30

Radius Inc., the leading maker of graphics products for the Macintosh, has announced the Full Page Display System for the Macintosh SE/30. The system consists of the Radius Full Page Display and the Radius FPD-SE/30 Video Interface, as well as *RadiusWare*. The Radius Full Page is a 15" high-resolution monitor featuring a low curvature screen. It displays a full 8.5" X 11" page without reducing or scrolling. Designed for desktop publishing, the 640 X 864 resolution and 77 dpi surpass Macintosh standards for image clarity and focus. The 69 Hz refresh rate provides a stable, flicker-free image for extended viewing comfort. *RadiusWare SE/30*, the Radius proprietary system software that accompanies the Full Page Display, includes Tear-off Menus, Screen Saver, Wide Display Option, Enlarged Menu Font, Screen Capture, and Cursor Locater. The Radius Full Page Display System for the Macintosh SE/30 will be available worldwide in July. The FPD-SE/30 Video Interface will list for $595. The Full Page Display lists for $895. Radius, Inc., 1710 Embarcadero Road, San Jose, CA 95131. (408)434-1010.

Integrated Macintosh Utility Combines Disk Management With File Undelete And Security Protection



XTreeMac is the first integrated utility to combine disk management with file undelete and security protection. With *XTreeMac*, Macintosh users can finally see a graphic representation of files in a tree-like display. In seconds, *XTreeMac* shows users a complete picture of their hard or floppy disk. It lets users easily locate, copy, move, and delete files from multiple files from multiple folders, on multiple volumes without clicking through a series of windows. In addition to its file management capabilities, *XTreeMac* offers Macintosh users a combination of hard disk protection and security features including data recovery and security protection. ($99) XTree Company, 4330 Sana Fe Road, San Luis Obispo, CA 93401. (805)541-0604.

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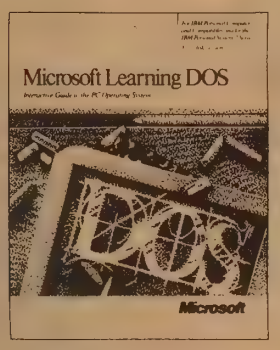

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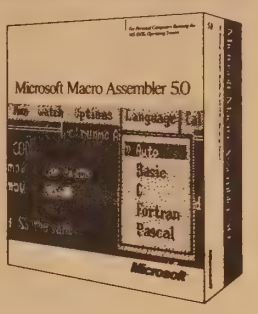

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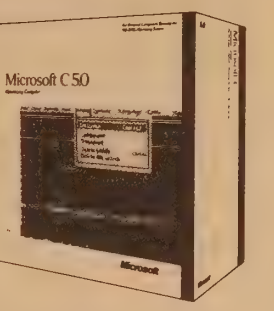

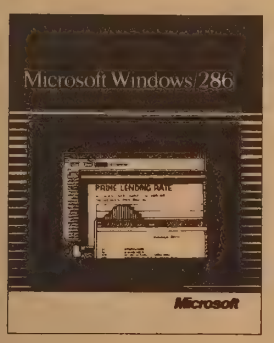

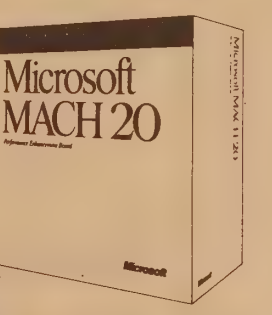

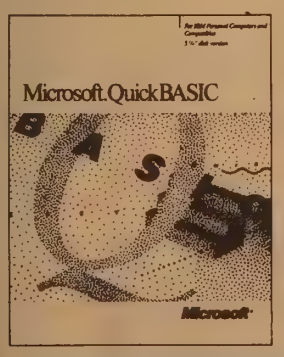

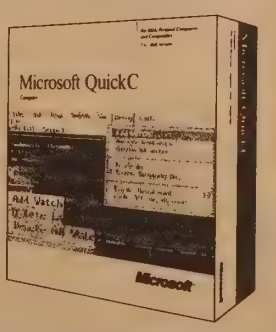

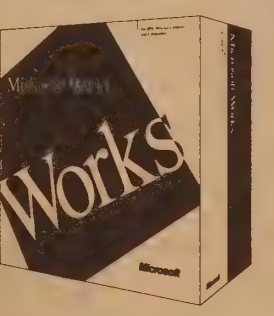

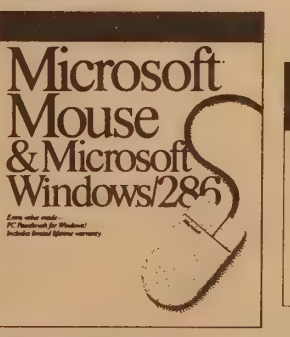

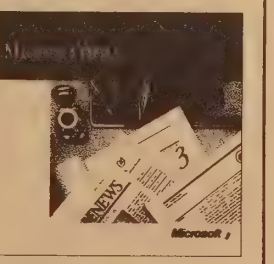

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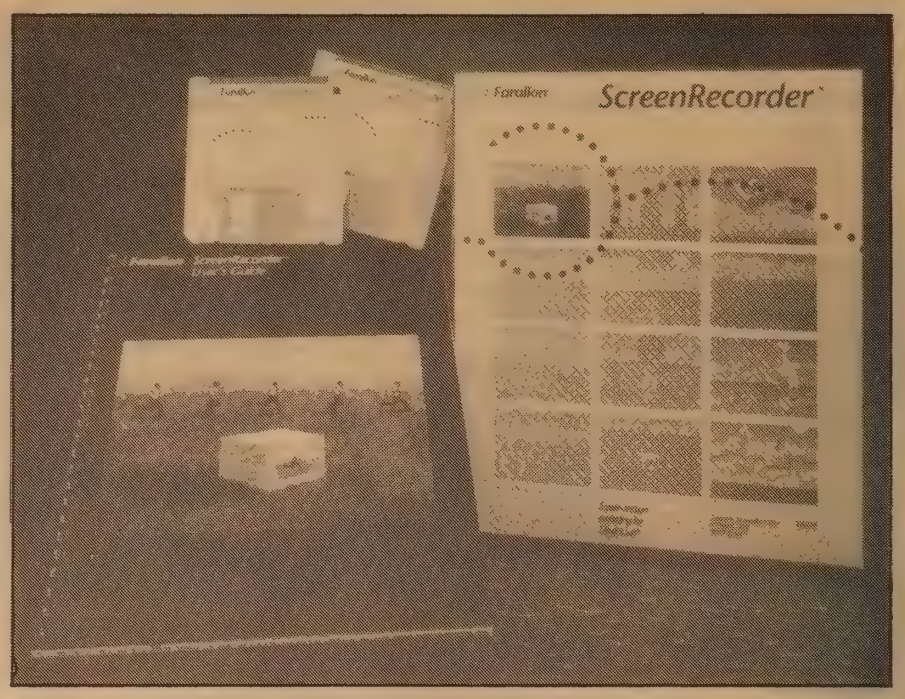
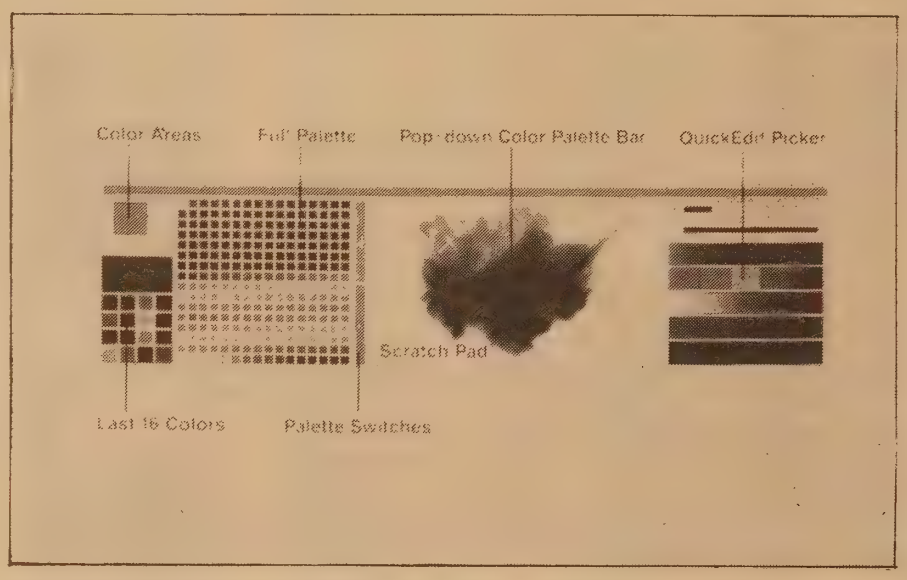
ScreenRecorder Records Your Presentations

Not a networking product, *ScreenRecorder* is software that lets users quickly record presentations, demonstrations, training, and educational tapes to disk for later playback. Using Farallon's *MacRecorder*, a user can add narration, music, and sound effects to *ScreenRecorder* "tapes," and produce multimedia presentations in Apple's *HyperCard*. Package includes royalty-free license to distribute *PlayScreen* drivers to play "tapes" from within *HyperCard*. Farallon Computing, Inc., 2201 Dwight Way, Berkeley, CA 94704. (415)849-2331.



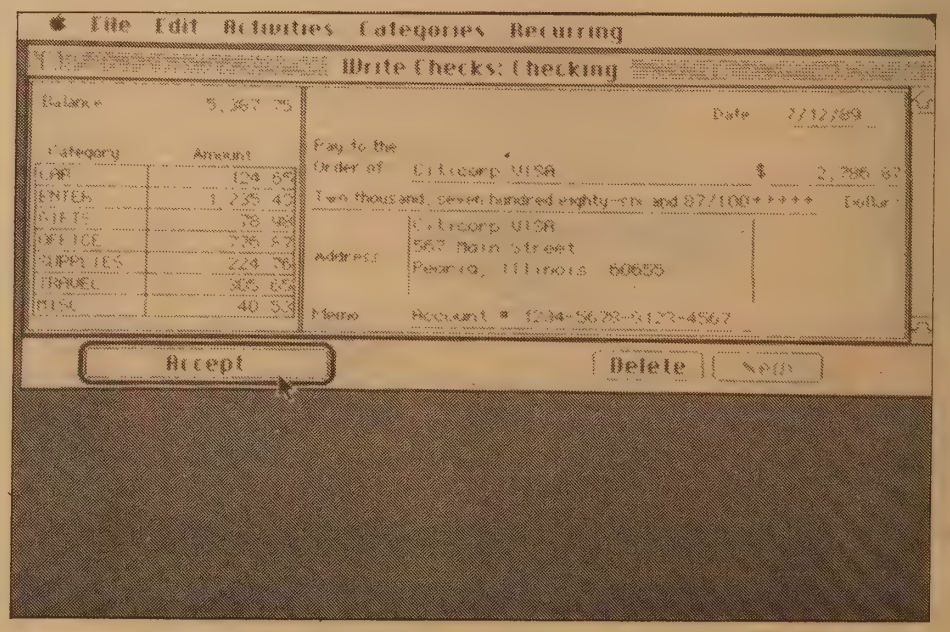


PixelPaint Professional For 32-bit Color Images

SuperMac has introduced *PixelPaint Professional*, a true color paint program that allows Macintosh II and SE/30 system users to import, create, manipulate, and export photographic-quality images. In its most powerful mode, *PixelPaint Professional* fully exploits Apple's 32-bit QuickDraw and a true color graphics card, and allows users to work on screen with nearly 16.8 million colors at once. *PixelPaint Professional* incorporates all the basic features of *PixelPaint* 2.0 including a PANTONE color picker for specifying industry-standard colors on screen; dithering for smoothing lines and shapes; plus a full range of tools for accurately scanning in images, for creating and manipulating artwork, and for producing color separations. *PixelPaint Professional* also implements features that are impossible with 8-bit color such as anti-aliasing for smooth edges, transparency control, and a realistic airbrush and color mixer. ($699) SuperMac, 485 Potrero Ave., Sunnyvale, CA 94086. (408)773-4446.

Upgrade to Quicken Arrives

The world's best-selling financial software package for the Macintosh, *Quicken*, has recently been upgraded to version 1.5. *Quicken* uses the widely popular single-entry method of accounting.Incorporating user suggestions, it offers new capabilities for both the individual and small business user, giving greater power for creating payables and receivables reports, cash flow analyses, budget reports, payroll summaries, and more.The new features in version 1.5 give users the trend information needed to make decisions regarding spending habits, credit policies, and cash requirements. ($59.95) Scott Cook, Intuit, 540 University Ave., Palo Alto, CA 94301. (415)329-2721.



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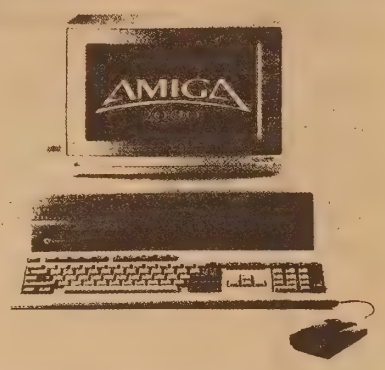

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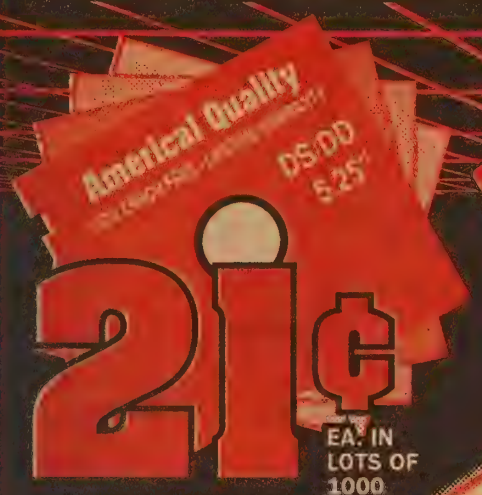

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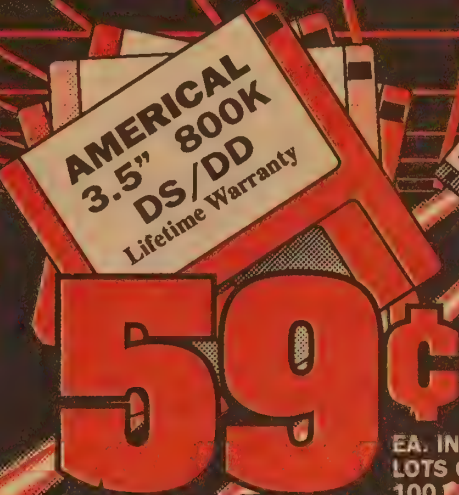

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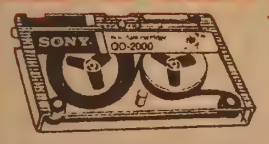

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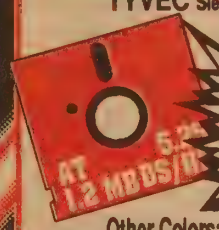

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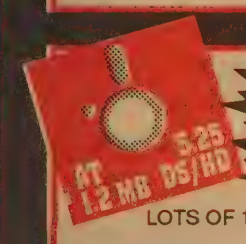

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BUSINESS COMPUTING

BY SUZANNA MUSICK

Do You Need A Multiuser Accounting System?

Remember when you first opened for business? You stocked a variety of good products; you encouraged your customers to pay in cash, and you, in turn, paid your suppliers. Your bank balance grew steadily; you were doing well. Then came more products, charge accounts, terms, a sales staff, support personnel—a real business! Operating out of a checkbook wasn't adequate anymore; you hired a full-time bookkeeper, with ledger books, and journals.

Since then you have probably graduated to a computerized accounting system, a major improvement over the manual process. Now the elusive accounts receivable aging report is printed in time to be meaningful. Financial statements that used to be prepared once a year by your CPA are available at the touch of a button (well, a few buttons). Payroll is accurate and on time, sales analysis reports are useful and inventory is kept current. You're rolling right along.

The business continues to grow, you hire a couple of accounting clerks to help deal with the volume, and now it's time to face the next hurdle. Do you need—and at what point do you need—a multiuser accounting system?

In this column, I'll discuss the major roles of an accounting system, the symptoms of an overburdened single-user system (and how to recognize them), the potential problems such a situation can bring to the business owner, and the benefits of moving to a multiuser system.

The Purpose Of An Accounting System

An accounting system serves two critical functions, of which the more apparent is transaction processing: entering sales, recording purchases, keeping an accurate inventory count, tracking who owes you money (and who you owe), printing invoices, statements, and paychecks—all the activities that go on in the day-to-day operations of a thriving business.

The other critical function is decision support: providing the information needed to make informed business decisions. If you know what products sell best and what products contribute the most to your bottom line, you know what to re-order, and what to stock for the busy season. Cash flow planning is easier if you have reports that show the bills coming due, outstanding accounts receivable, collections, and the cash expected from projected sales. The ability to measure which 20% of your customers provide 80% of your business helps you decide who gets wine during the holidays and who gets a greeting card.

Good accounting software provides extensive amounts of information. From timely reports management can gather enough data to make both day-to-day and strategic planning decisions. As an added benefit, much of that information can often be extracted from the accounting program and imported into other decision support software programs like databases, spreadsheets and financial forecasting, and analysis packages. Management can use this data to perform "what-if" analysis and prepare budgets.

The Overburdened System

As your business grows, so do the demands on your accounting system. Once again, the transaction processing requirements are more easily recognized. The accounting department starts putting in overtime, staying late, and coming in on weekends. The operating reports you came to rely on are not so regular any more. The accounting department is spending all their time just getting the transactions entered and the deposits made. Accounting clerks are waiting in line to get on the one computer you have. These are the warning signs of an inefficient accounting department and system, and the possible need to turn that single PC into a multiuser accounting system.

The business that's outgrowing its computer system faces an even greater danger when it comes to the decision support function of the accounting system. As the accounting department gets behind and overloads the single-user system, management reports and strategic planning information are usually the first to go. The accounting clerks monopolize the computer all hours of the day struggling not to fall too far behind. Often it becomes difficult, if not impossible, for the manager or business owner to access the more critical (but seemingly less important as long as everything balances, transactions are more or less up-to-date, and the cash is being deposited) strategic management information.

Management should not lose sight of the value of an accounting system. The accurate tracking of transactions is not an end in itself. Rather, transactions should be processed in order to generate the critical information needed to steer the business in the right direction.

Is Your System Overburdened?

To determine if you are being hampered by a tapped-out system, ask yourself these questions: Is sales order processing becoming a day-long task? Could daily transactions be entered more efficiently by two operators on separate machines? Are there certain accounting tasks that must be done at the same time each day? Do you need a computer at more than one location? Could significant efficiency be gained if certain accounting operations were integrated (data being shared by different functions)?

When the flow of decision support information is restricted, it can have a very serious negative, impact on the business. A lack of critical information can inhibit the growth of the business; worse, it can jeopardize the entire operation. Hampered decision-making potentially leads to ineffective cash management, inadequate inventory control, and misassignment of resources. Taken to its next logical step, this information gap can then lead to decreased service to customers, and can result in depressed sales.

Management should not lose sight of the value of an accounting system. The accurate tracking of transactions is not an end in itself. Rather, transactions should be processed in order to generate the critical information needed to steer the business in the right direction.

Benefits Of The Multiuser System

Upgrading to a multiuser accounting system can often provide substantial relief to the pressures on an overburdened single-user system. The ability to perform many tasks simultaneously, or have multiple people perform the same task, removes the bottleneck of only one person being able to work on the system at any one time. Data entry and data processing can take place while, at the same time, the manager is reviewing transactions or printing a critical report, or as a salesperson checks pricing and inventory availability for a customer.

By upgrading to a multiuser system, a business can increase productivity and open up new growth opportunities. When a multiuser accounting system is properly installed, your business has the capacity to grow, and you have the valuable information to guide that growth in an orderly, well-planned fashion. ■

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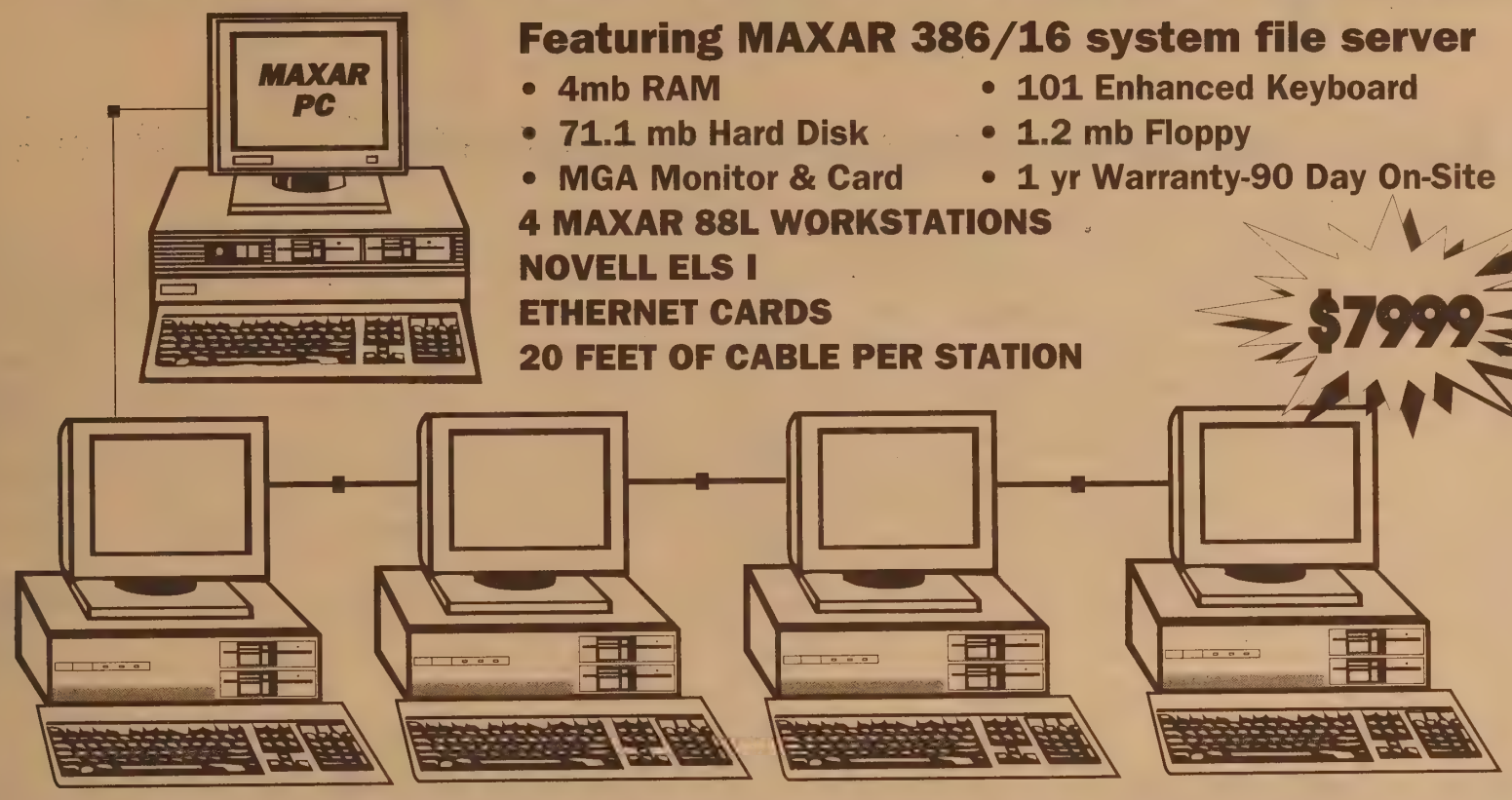

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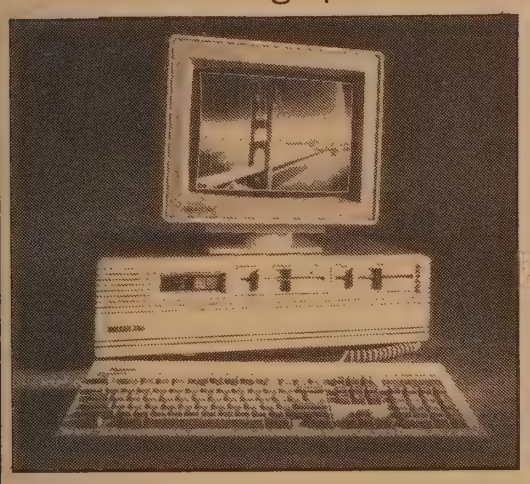

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BY WAYNE YACCO

Issues In Mainframe Connectivity

Whatever your present involvement with LANs, in the future, you'll probably be turning to them for an ever-increasing portion of your regular data requirements. That, at least, is what the vendors or microcomputer databases are preparing to support. However, they have some substantial obstacles to overcome along the way.

Some, like Oracle, have traded on the ability to access data across hardware platforms all along. Now vendors are seeking to provide the ability to access data, not only across hardware and operating systems, but from the files of other applications.

Access to the data, which is essentially the cerebral cortex of the enterprise, is every bit as touchy as brain surgery. There must be assurances that the patient will not only survive but that its personality will remain intact. Entrusting this to department managers or other users is about as likely as having a chiropractor operate on the central nervous system.

New and existing applications with familiar interfaces like the *dBASE* programming language, or emerging standards such as SQL, will provide the ability to work with the files on mainframes and minicomputers as well as to manage distributed LAN-based databases.

That seems like a worthwhile endeavor. After all, what we have now is akin to a Babel of data-management tongues. There aren't many good ways to find or use all of the information that's already in storage. What we need, as users, is a simple way to ask for answers and automatically access whatever resources exist that can help us. Data management should provide a functionality something like the expertise of a research librarian who knows where all the books are and what each contains.

Ashton-Tate, Microsoft, and Sybase have joined in one of these efforts to produce *SQL Server*. This application combines a basic database engine developed by Sybase, OS/2 LAN Manager connectivity provided by Microsoft, and Ashton-Tate's *dBASE* front end, distribution and sales efforts.

Jan Brundine, Ashton-Tate's Director of Connectivity Products, described the genesis of this evolution as beginning with "cooperative processing." That's A-T's term for becoming a member of the MIS design team. Until that happens, there isn't much hope of having real access to mainframe-based data, let alone enterprise-wide data.

And while it might seem that the solution is as simple as the MIS manager electing to buy a copy of a product like *SQL Server*, that alone isn't the answer. Even when the technology exists to access distributed data, including mainframe data, there are questions of internal control and data integrity that must be resolved before the technology can be implemented in a corporate environment. These are more substantive issues than mere politics (although politics and personalities will certainly enter into the formula in a significant way).

Access to the data, which is essentially the cerebral cortex of the enterprise, is every bit as touchy as brain surgery. There must be assurances that the patient will not only survive but that its personality will remain intact. Entrusting this to department managers or other users is about as likely as having a chiropractor operate on the central nervous system. MIS insists on absolute controls that can't be circumvented for the expedience of a thoughtless user.

So A-T and the others are working to establish new products that are viewed, as Brundine puts it, as a "valid enterprise-wide processing tool and member of the design team." These products include data validation, audit trails, privilege levels and security features that can protect data from misuse and abuse. Even with the precautions in place, there will be some cultural resistance before these new applications are accepted, simply because, until they have proven themselves, placing faith in them entails a certain amount of risk.

Gupta's Planet Library

SQL is seen by many as the forthcoming standard for accessing distributed data. To increase its ability to access data across platforms, Gupta is opening up its *SQLBase* database server with the help of Planet Software.

The Planet Library for *Clipper* allows users of the popular *dBASE*-language compiler to include SQL commands that access *SQLBase* and, through Gupta's *SQLGateway*, *DB2* on mainframes. The library takes advantage of *Clipper*'s user defined function capability to generate SQL commands for the *SQLBase* API (application program interface). The *SQLGateway* employs an essentially identical API.

If you're looking for hard-to-find LAN services or special training you should know about LANDA (LAN Dealers Association).

Since *SQLBase* can convert files from *dBASE* and *R:BASE* (from ASCII) this gives *Clipper* programs SQL access to a lot of data. And next year, Gupta will introduce an *SQLGateway For Oracle*, giving PC workstations access to minicomputer files as well.

There are other Planet libraries in the works. Both the Fox and *R:BASE* compilers will eventually have their own versions. The *R:BASE* version is already being demonstrated alongside the *Clipper* library on tour.

Gupta itself began selling the *Planet Library For Clipper* in mid-August. It was formerly sold exclusively by Planet Software; Gupta's push, including a road show, should give the product some quick market penetration.

LANDA

If you're looking for hard-to-find LAN services or special training you should know about LANDA (LAN Dealers Association). Consisting mostly of local dealers who specialize in LANs, LANDA is the organizer of the LANDEX trade shows and plans to begin a certification program. It also publishes a membership directory that includes all of its member dealers and manufacturers.

Directory listings are arranged by state or Canadian province (with a small international section) and indexed by manufacturers, distributors, resellers, and individuals. Each entry provides the company name and address, contact person, type of business, number of years in the field, number of employees, product lines carried, training offered, maintenance capabilities, and any special services performed. It is available to non-members for $90. (LANDA, 312/279-2255, 360 W. Butterfield Rd., Suite 260, Elmhurst, IL 60126.) ■

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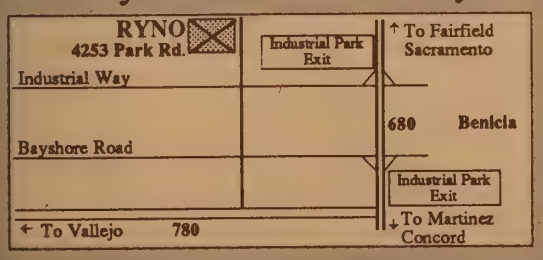

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BY BENNETT FALK

Fear Of UNIX:

Lex and Yacc For Humans

"Lex" and "yacc" are two genuinely obscure UNIX utilities. It's a safe bet that most UNIX users are unaware of how these programs are used and what they do. This lack of awareness by itself really isn't a problem: most people don't need to use either lex or yacc to get their work done. The real problem is fear.

People are afraid of lex and yacc. They are afraid because the names are strange. They are afraid because they've heard the names but don't know what the utilities are for. They are afraid because reading the manual entries for lex and yacc doesn't really help. They are afraid because no matter how comfortable they are with UNIX, there will always be some authority figure around to remind them of their ignorance with an offhand "Yes, but what about lex and yacc?" They are, finally, afraid because saying these names out loud repeatedly could permanently impair one's diction.

Fortunately, fear is relatively easy to dispel.

Lex And Yacc: What Are They?

Lex and yacc are tools used by people who write programs in C: these tools do nothing more than help the programmer manage input processing in a program. They provide a way to describe what kind of input a program will accept, and they structure this input in such a way that the program can use it efficiently.

To understand what lex and yacc do, it is necessary to understand a thing or two about programs and input. Not all programs require input: some programs contain all the information needed to do their intended job. The "sieve" program that finds and prints prime numbers is an example of a program that needs no input.

Other programs expect input but have no need to analyze the input they are given. The UNIX "cat" program simply copies its input to its output. All cat needs to know about its input is whether or not the most recent attempt to read input returned an end-of-file token. Apart from this, cat reads anything it is given and copies it to an output channel.

Still other programs rely on input for information from which to make critical decisions about the program's behavior. Calculator programs, such as the UNIX "bc" program for example, expect input that contains both data and instructions about how that data is to be manipulated. Bc can do nothing until it sees properly formatted input with both numbers and arithmetic operators.

The rules that describe acceptable input for programs like bc actually make up a miniature language that controls the program's behavior. Most UNIX programs assume that their input will come from a user working at a terminal, and so the language for controlling the program needs to be something a user can memorize as well as something that's easily entered from a keyboard.

But a language that satisfies the user's requirements is not likely to be very efficient for the CPU on which the program must run. The user would prefer to enter text, but the computer demands that the input be expressed in symbols that fit into memory agreeably with known data types (such as character, integer, or floating point number) assigned to any constants the user entered.

Lex and yacc provide the means for translating the user's input into a format the program can work with. This translation happens in stages. The first stage is a straightforward left-to-right linear scan of the text the user entered. Scanning is also known as "lexical analysis," and "lex" is simply a device for creating lexical analyzers to be incorporated into programs.

The second stage involves checking the syntax of the scanned input to be certain that it complies with the rules set up by the programmer. These rules make up the program's "grammar" (this is a language after all), and checking the syntax of the input is usually called "parsing." Yacc is a tool for building parsers. Because the business of translating a program from one language to another is often called "compiling" (particularly when the target language is a machine language), yacc could be thought of as a compiler to build compilers; indeed, the name "yacc" is an acronym for the tortured phrase "yet another compiler compiler."

A lexical analyzer's scan of user input is similar in some respects to what the utilities "grep" and "awk" do. The analyzer looks through the input for patterns or "regular expressions" that are significant for the program, and when it finds them, it does whatever the programmer specified for the expression encountered. Typically, the lexical analyzer will strip out the characters like blank, tab, and newline, which make the input readable to the user. It also translates any keywords, identifiers, and constants into tokens that are understandable to the parser.

The tokens produced by the initial scan of the

People are afraid of lex and yacc. They are afraid because the names are strange. They are afraid because they've heard the names but don't know what the utilities are for. They are afraid because no matter how comfortable they are with UNIX, there will always be some authority figure around to remind them of their ignorance with an offhand "Yes, but what about lex and yacc?"...

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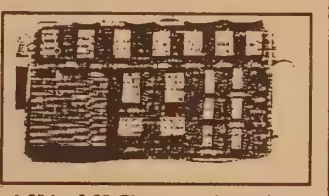

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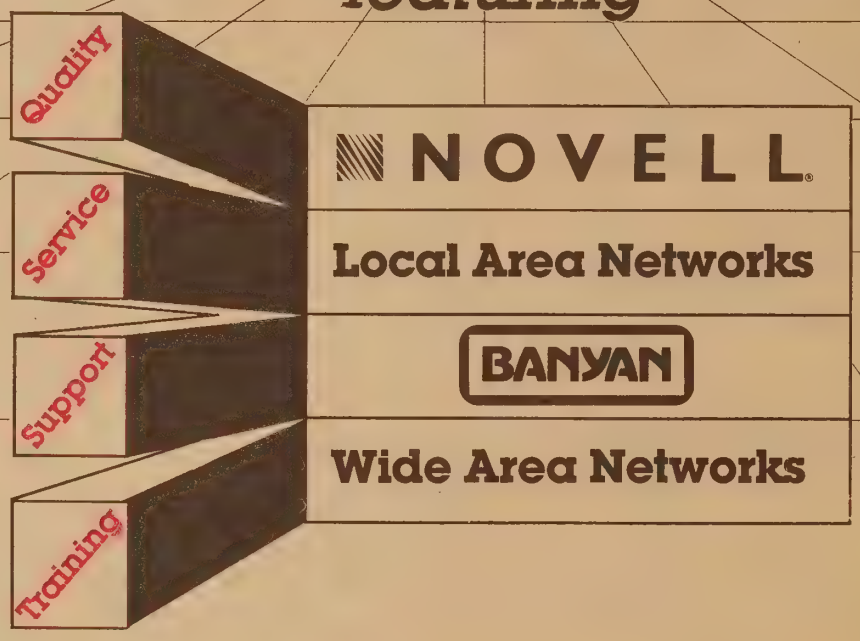

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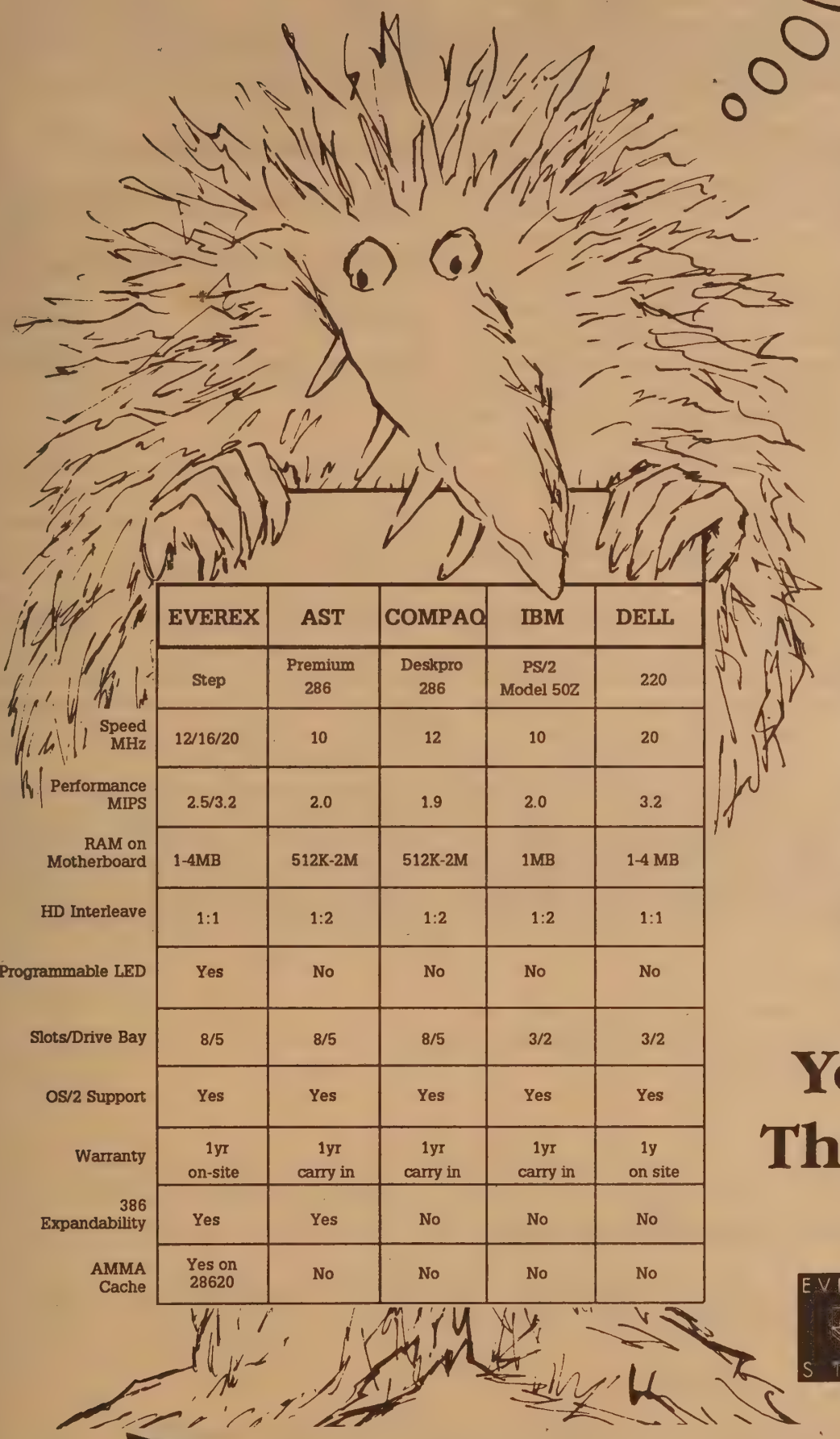

	EVEREX	AST	COMPAQ	IBM	DELL
	Step	Premium 286	Deskpro 286	PS/2 Model 50Z	220
Speed MHz	12/16/20	10	12	10	20
Performance MIPS	2.5/3.2	2.0	1.9	2.0	3.2
RAM on Motherboard	1-4MB	512K-2M	512K-2M	1MB	1-4 MB
HD Interleave	1:1	1:2	1:2	1:2	1:1
Programmable LED	Yes	No	No	No	No
Slots/Drive Bay	8/5	8/5	8/5	3/2	3/2
OS/2 Support	Yes	Yes	Yes	Yes	Yes
Warranty	1yr on-site	1yr carry in	1yr carry in	1yr carry in	1y on site
386 Expandability	Yes	Yes	No	No	No
AMMA Cache	Yes on 28620	No	No	No	No

Often in this crazy industry, a newcomer seems to suddenly leap into the scene and takes the industry by storm. Such is a company called **EVEREX**.

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7. DOS 3.3 is standard. **8. OS/2**
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A language that satisfies the user's requirements is not likely to be very efficient for the CPU on which the program must run. Lex and yacc provide the means for translating the user's input into a format the program can work with.

user's input are passed to the parser. The parser does a syntax check and organizes the input hierarchically: the various operations requested by the user are put together in a tree-like structure that establishes the sequence in which things are to be done. This has a lot in common with the diagramming of sentences we all did in grade school, but the structure the parser produces is something that can be handed over to the CPU to be executed.

Using Lex And Yacc

The mechanics of using lex and yacc are relatively simple. Both these programs are code generators: they take as input specification files provided by the programmer, and they produce the necessary C source code to do parsing or lexical analysis. The C code produced by lex and yacc is considerably larger than the specification files: even relatively simple specifications will produce 300 to 500 lines of C when run through lex and yacc.

Lex and yacc specification files have the same general format consisting of three sections. The first section contains declarations of variables that the rest of the program will need. This section follows the conventions used by C for variable declarations. The second section contains the rules that govern what the input should look like and what action to take when any particular rule is triggered. The last section contains the C source code for any customized routines the user wants called during the analysis of the program's input.

The rules section of a lex specification file describes the regular expressions that are significant to the program and what to do when each is encountered. Unfortunately the notation used for regular expressions in lex is different from that used in either grep or awk. The rules portion of a yacc specification file contains the grammar the program will recognize, and designing an unambiguous grammar can require considerable finesse.

Once the specification files are prepared, the programmer runs yacc and lex giving each the name of the appropriate specification file. Lex reads its specification file and produces a file named "lex.yy.c". Yacc puts its newly generated C code in a file named "y.tab.c". The C compiler is then used to transform y.tab.c into something useful. The source code produced by yacc and lex uses a few specialized input processing routines that are

The mechanics of using lex and yacc are relatively simple. Both these programs are code generators: they take as input specification files provided by the programmer, and they produce the necessary C source code to do parsing or lexical analysis.

stored in separate libraries, and these must be linked in when lex.yy.c or y.tab.c are compiled.

As you might imagine, concise examples of the proper use of lex and yacc are in short supply. However, if you're sufficiently free of anxiety and want to practice using them, Brian W. Kernighan and Rob Pike have included an excellent illustration of how to use lex and yacc in chapter 8 of their book *The UNIX Programming Environment* (Prentice Hall, 1984).The rest of us will be right here working on our diction. ■

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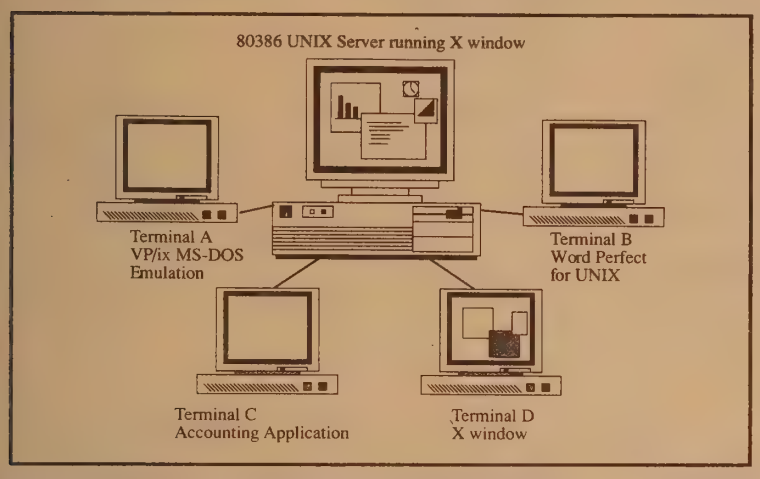

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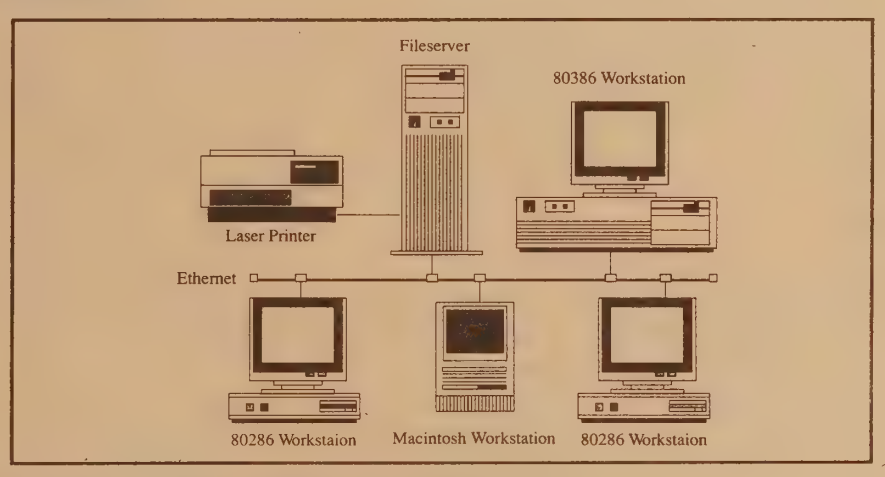

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BY MATTHEW LEEDS

The Best Freely-Distributable Software

I've been getting commercial software sent to me for review for the last five or six years. Both the best and the worst have shown up on my porch, some of it finally ending up installed on my hard disk for regular use, and much of it ending up on the shelf gathering dust. Of the dozen or so programs I use on a regular basis, almost half are freely distributable.

A distinction needs to be drawn here, which is why I call this software freely distributable instead of public domain. Much of the software written by authors for distribution by other than traditional commercial means is not public domain. The copyright is retained by the author, who often puts certain restrictions on its use or distribution, and often asks for a contribution if you use it on a regular basis.

I've completed a list of ten programs I think exemplify the best in freely distributable software. These are programs that I either use on a regular basis or believe offer exceptional features. They are all available from the standard distribution channels used for these types of programs: Fish disks, BBSes, and user groups. If you have serious problems finding any of these, let me know and I will post them on The WELL. You can send me email on The WELL (mklsf), or send a letter care of *MicroTimes.*

ARC

By System Enhancement Associates

ARC is used to compact a set of files (or a single file) prior to uploading or transferring via modem. It makes the process of sending a set of files simple by allowing you to preprocess the files into a single archive that's much smaller than the original set of files; since it is a single file, it does not require a batch send mode.

ARC has become something of a standard on the Amiga, as well as in other environments, but it has some drawbacks. It only supports filenames of eight characters (a characteristic of its MS-DOS heritage), and it has no support for preserving subdirectory structures. It is still very much in use, in part because it is so easy to use.

ZOO

Written by Rahul Dhesi and modified to run on the Amiga by J. Brian Waters.

Zoo supports full-length AmigaDOS filenames and can archive and restore a directory structure. This release of *Zoo* has a command that tries to make life a little bit easier when using *Zoo* with a single drive—a command line option to *Zoo* that causes it to wait for the user to press return before doing any disk I/O. If a "w" is the first character in the command, *Zoo* will wait for return (zoo wx zfile). These options make *Zoo* easier for users when they unpack files, and much easier for users with a single drive (if there are any left out there). *Zoo* is a little more intimidating than *ARC*, but it has gained quite a bit of popularity.

VirusX is the best virus protection I've found. There are other virus protection programs, and other schemes for testing for viruses, but so far, if you only use one program, VirusX is the one.

AutoMount V1.4

By Khalid Aldoseri

AutoMount will automatically "mount" all the entries in your "DEVS:Mountlist" file. It will attempt to mount each device it sees in the mountlist file, except for the RES?: partitions. Also, if a device has already been mounted, *AutoMount* will not complain.

The main reason for this program is to shorten your startup-sequence file. Instead of having a set of lines in your startup-sequence like this:

Mount DH1:
Mount PIPE:
Mount SPEAK:

you just use the command "AutoMount". This mounts everything. If you say "AutoMount Floppy", this will speed up the program when booting from a floppy disk. *AutoMount* will do the following:

- Initialize RAM Disk
- Copy "Devs:Mountlist" to RAM
- Copy "C:Mount" to RAM
- Mount DEVICE FROM RAM:Mountlist

This will normally increase mount speed by 50%.

DiskSalv

By Dave Haynie

DiskSalv V1.40 is a disk recovery program for all Amiga file system devices that use either the AmigaDOS V1.2/V1.3 Standard File System or the AmigaDOS V1.3 Fast File System. *DiskSalv* will scan a bad disk volume for anything that can be recovered, and will restore these items to any AmigaDOS volume. It does not make any attempt to fix the bad device in place; thus, any file that can't be restored with *DiskSalv* might possibly be restored with an alternate method.

DiskSalv is the program that should be on all Workbench disks instead of *DiskDoctor.* It works, and when it doesn't, it leaves your original disk intact (or at least in no worse condition than before) so that you can try some other method of fixing it. It works best for floppies, as it generally requires a second hard disk to write to when repairing a hard disk, although there are ways around that restriction.

FastDisk

By Torsten Stolpmann

FastDisk is a program that optimizes the at-times-chaotic disk structure of an Amiga disk. Everybody knows how long it can take for a long directory to be read into memory. *FastDisk* accelerates this process between three and five times. Everybody knows the noise the drive makes when trying to read the Workbench icons. *FastDisk* reduces the head movement to a minimum, accelerates the validation time and the boot process, and also accelerates the load-time of a program up to 50%.

It does this by reorganizing the layout of a disk. File headers, icons, and other directory items are placed in order in the directory, while files are written on contiguous tracks to minimize head seeks. *FastDisk* is as easy to use as Diskcopy. If you continually write back to a disk optimized with *FastDisk,* you will eventually need to reorganize it, but for boot disks or disks with large programs it's excellent.

FPIC

By Bob Bush

Fpic is an image processing program, designed specifically to be used in conjunction with digitized (*Digi-View*) lo-res black & white IFF picture files.

Since the program was written to utilize *Digi-View* B&W pictures, some special processing relating to these images was required. When a b&w lo-res image is saved by *Digi- View*, it stores the image as a 32 color IFF format file. Since the Amiga is capable of displaying 16 shades of gray, the *Digi-View* image only utilizes colors 16 thru 31 of the

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Matthew Leeds has been involved in the high tech field since he blew up his bedroom playing with a children's chemistry kit. He has been using Commodore computers since 1982 and has a strong interest in photography, video, graphics, and related fields.

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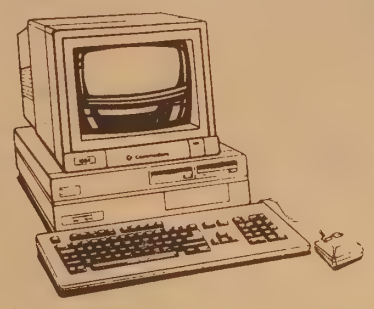

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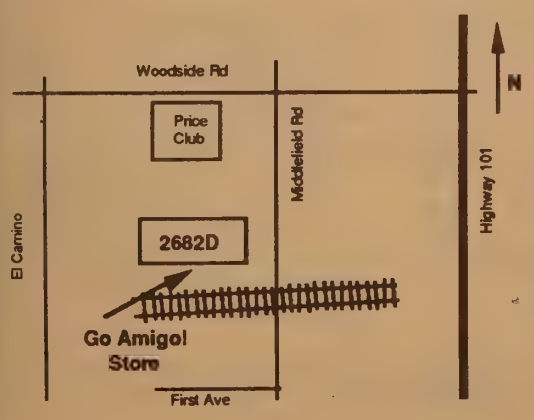

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Of the dozen or so programs I use on a regular basis, almost half are freely distributable.

entire 32 color palette. *Fpic* depends on this color mapping to work effectively. Results using images without this color mapping are unpredictable (at best) but sometimes interesting. If you're interested in experimenting with image processing, *Fpic* is an excellent place to start. You can get around the color mapping problem if you are using non-*DV* images by remapping an image to sixteen colors in a paint program.

LEX

By Jeff Sullivan

LEX is a program that performs a number of useful functions on a text file. It outputs word count, long word count, and sentence count; it performs three readability algorithms on the document. I've found it very useful as a means of judging my writing. The three algorithms are

The Gunning-Fog index—The number equals the approximate level of schooling (in years) needed to understand the document.

The Kincaid index—Similar to the Gunning-Fog index in its interpretation.

The Flesch index and Flesch Grade Level indicators—The Flesch index is inversely proportional to the difficulty of the document; the lower the scale, the harder the document. It is based on a 1-100 scale. The Flesch grade level indicator is, again, analogous to the other two.

The usefulness of three different indices is to compare their agreement. The closer their agreement, the more reliable the measure (they all use different algorithms, but usually come out pretty close).

NewZap

By John Hodgson

NewZAP is a multi-purpose file sector editing utility. If you've ever had the need to alter just a few bytes within a file, examine its binary and ASCII representations, or search for key sequences of digits or characters, *NewZAP* will make your hacking life a little bit easier. It does what text editors were not meant to do; precise position-oriented object modifications. NewZAP will run from CLI or Workbench under any KickStart with or without FAST RAM. I've used it to edit files on-disk to change defaults, patch file requesters, or repair damaged icons. It's a dangerous program if you're not careful, but it's also very useful.

POPCLI

By The Software Distillery

POPCLI is designed to solve two problems at once. First, it provides a simple way of starting another CLI at any time without having to load Workbench or exit whatever program you may be using. Second, it has a built-in screen saver mode that automatically turns off the Amiga display when there has been no input for a given period of time.

Once *POPCLI* is running, you can use it to get a new CLI from whatever program you are running by pressing Left Amiga and ESC at the same time. This brings the Workbench screen to the front and then starts up a new CLI window on the Workbench screen. This is extremely handy when you start a program from CLI and then find you need to do a CLI command.

The other function *POPCLI* performs is to blank the screen for you. This saves on the wear of the monitor phosphor. It will do this for you automatically any time you have not pressed any key or moved the mouse for a given period of time, regardless of what has been written to the screen. This is useful when you leave the Amiga on unattended so that you don't have to mess with the brightness control or, worse yet, turn the monitor off, putting wear and tear on its power supply. Furthermore, it only takes a touch of the mouse or any key on the keyboard to bring it all back.

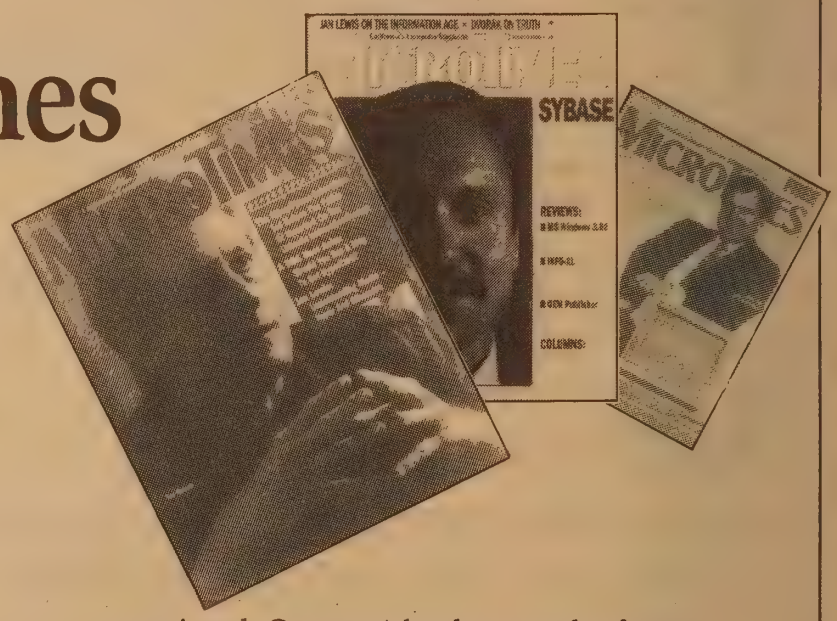
I've mentioned *POPCLI* before; it's one program I couldn't do without.

VirusX

By Steve Tibbett

VirusX is a must-have. I've covered Amiga viruses in the past, and *VirusX* is the best virus protection I've found. There are other virus protection programs, and other schemes for testing for viruses, but so far, if you only use one program, *VirusX* is the one. ■

No Other Magazines Were Mentioned!



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6. Lotus
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9. Time

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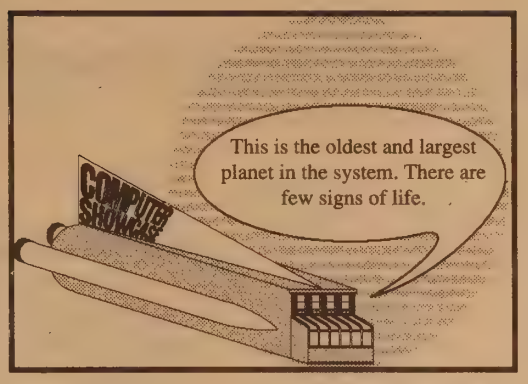

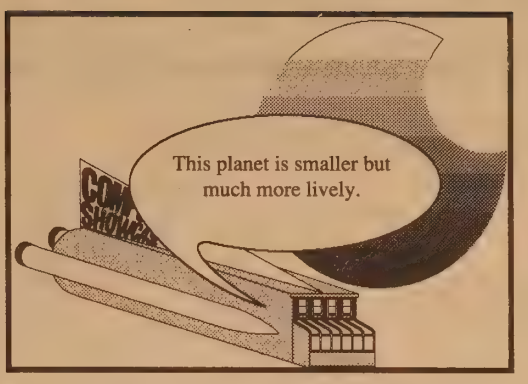

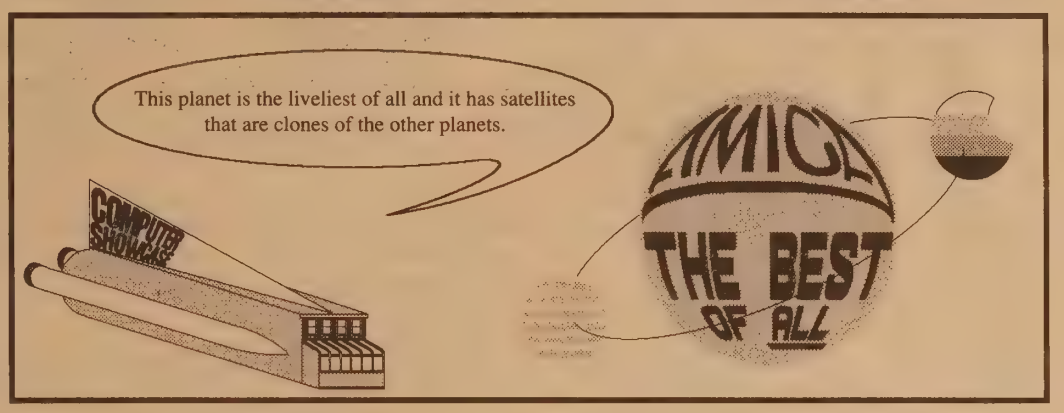
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BY DAVID HAWKINS

CAD On The ST

Back in 1971, I was a freshman at Tennessee Technological University. I didn't have any idea what I wanted to major in, and ended up getting a degree in Electrical Engineering.

It was a bad time to be an engineering major. There were no personal calculators or personal computers. We used slide rules and could submit batch files to the department mainframe. Printouts that were considered inappropriate were not returned, and our computer access was restricted. "Inappropriate" covered a pretty wide range, too.

Drafting

But one of the really depressing parts of freshman engineering was two classes in drafting. They called it "engineering graphics," and I hated it. It was even worse than ROTC—at least there were some coeds who liked me in a uniform, while the drafting board and T-square didn't seem to make me look better to anyone.

I didn't do too well in my drafting classes, and kept telling myself that I would never do this for a living. My engineering career ended up including six years of drafting. Never say never.

The problem with drafting is that it involves a lot of small details. Measuring the dimensions very carefully is important. The line width of each mark on the paper is important. The different types of cross-hatching had to be done just right.

Fortunately that was almost 20 years ago. Now we have personal computers, like the Atari ST, to help take care of the picky details of things like drafting.

This is done with CAD programs. CAD stands for Computer Aided Design, and the computer screen represents the drawing surface. The computer takes care of details like drawing straight lines, making the letters look right, measuring the dimensions correctly, and a lot of other details.

The program I've been working with is *BeckerCAD ST*, which is distributed in the US by Abacus Software, 5370 52nd St., NE, Grand Rapids, MI 49512. Their phone number is (616)698-0330.

BeckerCAD

The difference between a CAD program and a painting program (like *Degas*, for instance) is that in a CAD program every object can be edited, modified, or deleted. Since the paint program is only concerned with the overall final appearance, it doesn't keep each object in memory.

In *BeckerCAD*, everything is organized in layers. You can put the basic rough design in the first layer, and then print some of the details from higher layers as needed.

For example, you can sketch out the basic design for a room in the first layer. Another layer might have the symbols for the electrical fixtures in it. Still another might have the plumbing layout, and yet another, the lighting design. You could then print out one copy that showed everything, so that you could see that there wouldn't be a conflict in the routing of the conduit. Another copy could show the electrician what lines to put in and where the lighting would be. The person installing the lighting fixtures would only need to know where they went, not all the extra details of how the power was routed to them.

Basically, working in layers allows a lot of experimentation in design as well. You can do your simple room design in the first level and try different arrangements in that space with higher levels.

CAD programs handle other things that are painstaking to do by hand. They measure everything and put the dimensions in for you. If you add a line and it's at an odd angle, the program does the calculation for you. It can then put the length in either feet and tenths of a foot, or feet and inches. (It also does metric, and "fathoms" is also listed, if you need it.)

Most objects are made of straight lines and right angles. Even things we think of as rectangular, like the license plate of a car, aren't exactly rectangles. Take a look at the corner of that license plate—it's rounded. If you're designing something like that, you have to show how rounded you want it. A CAD program can do that for you. This can be very handy when you're working with materials that you can't bend at a right angle, like plastic and some metals.

BeckerCAD has a couple of libraries of symbols. If you're designing a room, then you can pick out standard architectural representations of furniture, like sofas, bookcases, etc. There's also a set of plumbing, electrical, and electronics symbols. When you're drawing by hand, it's a matter of keeping templates around and filling them in carefully. Here it's a matter of cut and paste from the library.

Other libraries include types of lines (different thicknesses and different types of dashing) as well as selections of cross-hatching.

BeckerCAD also has a macro interpreter and a built-in programming language, which can make it easier to do repetitive tasks. There's also a font editor, if you want to change the appearance of letters on the screen and in the printout.

You can also use various printers, including PostScript printers, with *BeckerCAD*. It will also work with plotters if you have one. The most accurate means of doing a printout would be to produce a PostScript file and transfer that to a phototypesetter. Fortunately most designs don't need that much detail. ■

The difference between a CAD program and a painting program is that in a CAD program every object can be edited, modified, or deleted. Since the paint program is only concerned with the overall final appearance, it doesn't keep each object in memory.

Copyright © 1989 by David Hawkins. All rights reserved. *David Hawkins is the host of the Atari conference on The WELL (415/332-6106); send email to dhawk. He has one of the first Atari ST 1040s sold in San Francisco, both monitors, an Okimate 20 color printer, and disks all over the room.*

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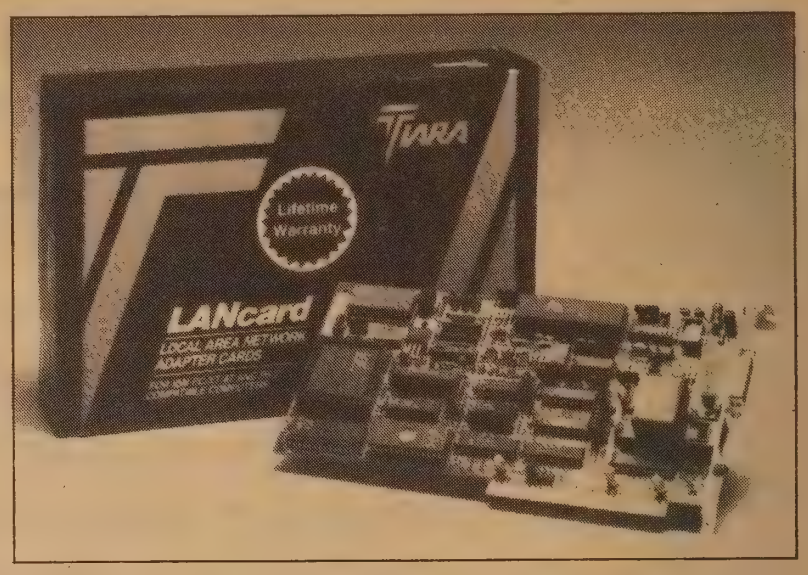
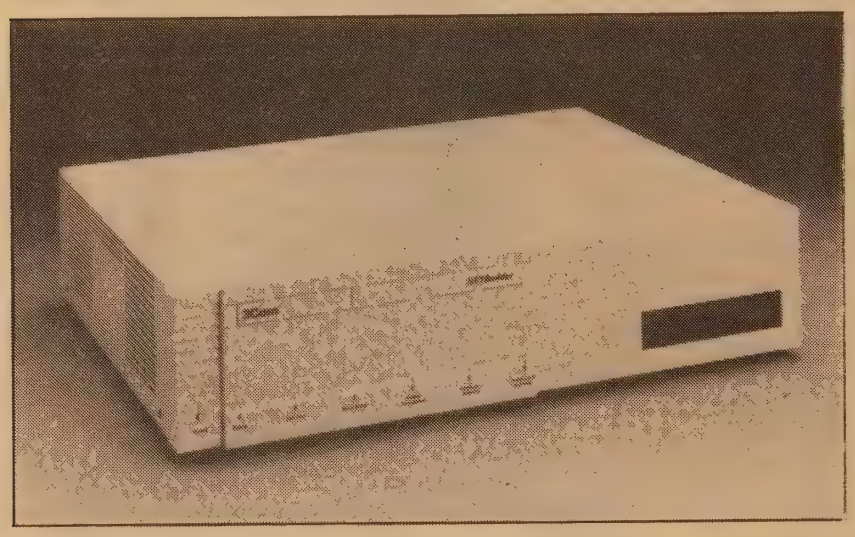
8-bit Tiara Interface Board



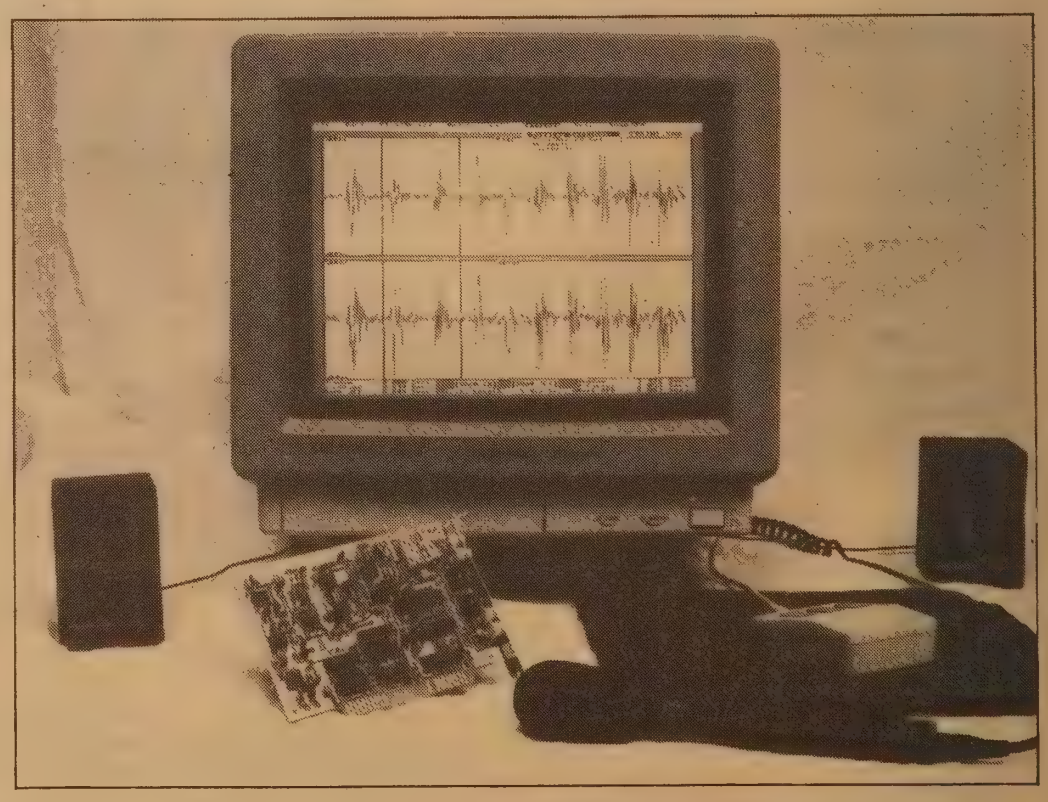
Tiara Computer Systems has introduced an 8-bit Ethernet network interface adapter that combines the Fujitsu EtherStar LAN controller chip with SynOptics' LattisNet unshielded twisted pair technology. Called the LanCard/E PC Twisted Pair, the new 8-bit board transfers Ethernet traffic through basic unshielded telephone cabling. It is fully configurable and offers 8 K or 32 K of buffer memory. The LanCard/E PC Twisted Pair also includes an LED continuity indicator and a BootPROM socket for boot-from-network capabilities. It offers a high performance option for zero wait state machines. In addition, the adapter features a LattisNet on-board transceiver. It is supported by a number of popular network drivers including Novell NetWare, Microsoft LAN Manager, Tiara TCP-DOS (TCP/IP), Netbios, and proprietary and diagnostic software. The LanCard/E PC Twisted Pair has been available since June. Lisa Morgan, Tiara Computer Systems, Inc., 2700 Garcia Ave., Mountain View, CA 94043. (415)965-1700.



3Com Ethernet Bridges Use 68020 CPU

3Com Corporation has introduced two local Ethernet routing bridges based on its new low cost NETBuilder internetwork system platform. These bridges are priced more than 15 percent below comparable bridge products. NETBuilder is a second generation, single board hardware platform that uses a Motorola 68020 32-bit microprocessor. The NETBuilder IB/2000 and IB/2001 are interoperable with 3Com's current internetwork bridge (IB) family of routing bridges, including the IB/1, IB/2, and IB/3, and significantly enhance network performance with their ability to forward data packets at a rate of 10,000 packets per second, while filtering packets at a rate of 22,000 packets per second, a 70 percent increase in performance. The IB/2000 routing bridge supports two-way connection to thick Ethernet cabling through standard connectors; IB/2001, also a two-way routing bridge, supports connection to both thick and thin Ethernet cabling. Both products are designed for use in Ethernet backbone networks and for isolating or connecting personal computer workgroups, computer aided design environments, and computing resources to other network segments. IB/2000 and IB/2001 are available immediately from 3Com and its worldwide network of resellers and distributors. IB/2000 is $5,250 and IB/2001 is $5,650. For more information, contact: Norman Lombino, 3Com Corporation, 3165 Kifer Road, Santa Clara, CA 95052-8145. (408)562-6400.

SuperSound Gives The PC Mac-like Sound Capability



SuperSound System I is a total system of software and hardware to add full fidelity digital stereo sound recording and playback to the PC/XT/AT family of computers. With it, end-users and software developers can now easily add sound, voice, or music to business presentations, training, educational, or entertainment software. Unlike voice or simple music synthesizers, the reproduced sounds are clear and natural and no text to sound translation process is required. The SuperSound System I includes:

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The SuperSound System I provides for the first time a very powerful, simple, and inexpensive stereo sound laboratory for use with the IBM PCs. SuperSound can be used to directly record and play music or voice, and gives the user editing and creation functions as well. ($339) Silicon Shack, Ltd., 5120 Campbell Ave. Suite 112, San Jose, CA 95130. (408)446-4521.

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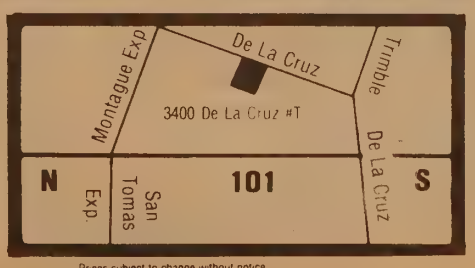

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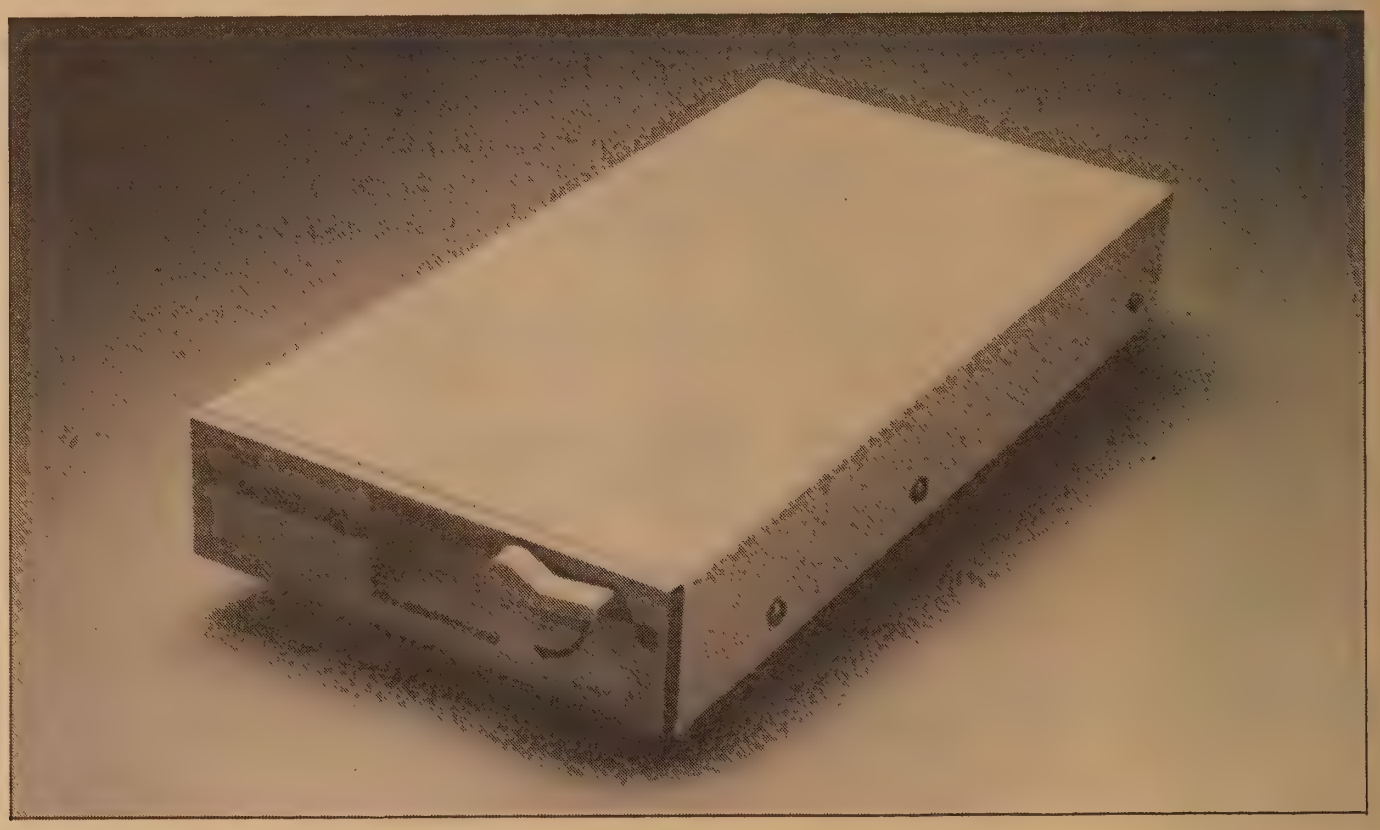

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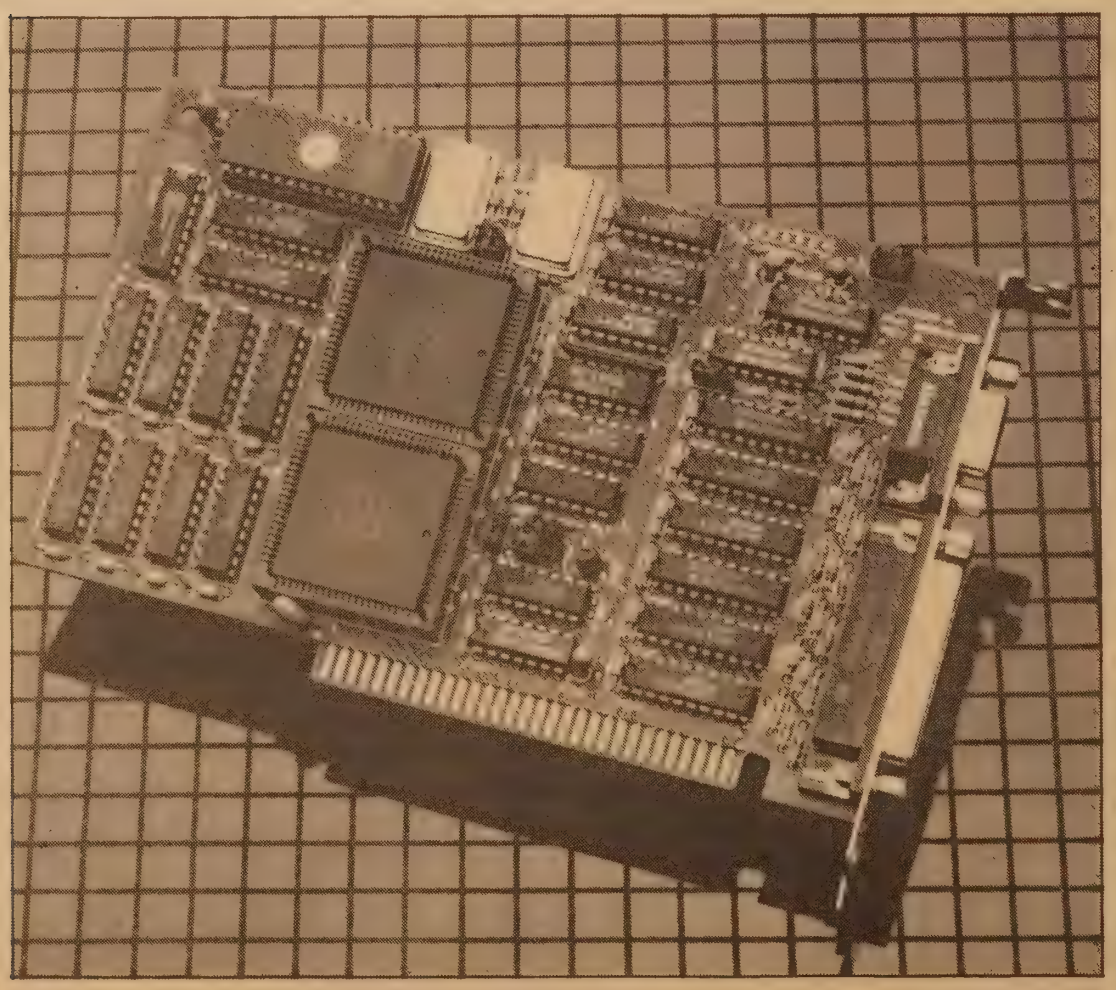

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w/14" EGA monitor w/ Super-EGA.... $1395
w/ 13" Multi-sync w/ HiRES-EGA ... $1575

Trans/PS 286- 20

$1140*

16-bit 80286-20 CMOS microprocessor
80ns Zero-wait memory access
Real-time system throughput 26.7MHz
Norton SI = 23.0; MIPS=3.03
Certified Phoenix BIOS
1MB base memory up to 8MB on-board
2 serial and 1 parallel port
Dual hard/floppy disk controller
1.2MB floppy disk drive
FCC Class-A unit
Enhanced workstation keyboard
Technical reference manual
Hard cover user's manual with slip case

Trans/PS 386- 20

$1575*

32-bit 80386-25 microprocessor
COMPAQ/IBM system architecture
32-bit 1MB of memory (optional 4MB)
Real-time system throughput 25.5MHz
Norton SI = 23.0; MIPS=3.5
Software switchable to 8, 10, and 20 Mhz
Optional 80287/80387 math-coprocessor
Certified Phoenix or AWARD 386 BIOS
2 serial and 1 parallel I/O port
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* add $290 for TOWER case

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32-bit 80386-25 microprocessor
32KB memory caching
COMPAQ/IBM system architecture
32-bit 1MB memory expandable to 14MB
Real-time system throughput 43.5MHz
Norton SI =31.6; MIPS=5.8
Software switchable to 8, 10, and 20 Mhz
Optional 80387 and Witek math-coprocessor
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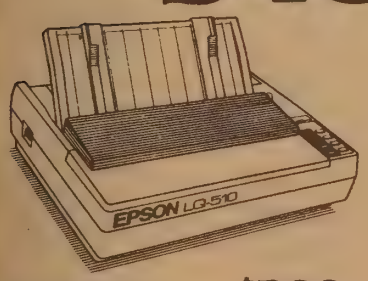
- 20MB (65ms): $268
- 30MB (RLL, 65ms): $298
- 1200 baud MODEM: $49
- 2400 baud MODEM: $98
- TAPE BACKUP: $298

EPSON® LQ-510

$348



LQ-500 ___ $288

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- 40MB (40ms): $324
- 40MB (28ms): $405
- Portable copier: $298
- Handy Scanner: $198
- Plotter in a catridge: $295

EPSON LX-810

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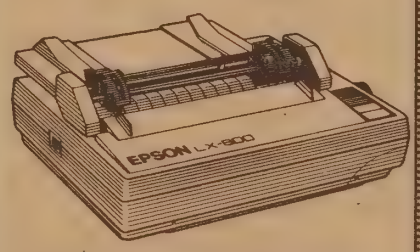

LQ-510, LQ-1050, LQ-850, LQ2550 IN STOCK !!!

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Turbo-88

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- 150 watt power supply
- 8087 socket
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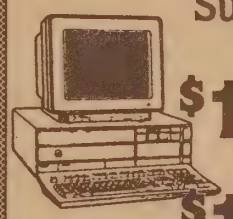
- 101 Key enhanced keyboard
- Serial RS-232C port
- Game Port
- Clock/Calendar

Monitor & Hard Drive Options

Floppy Only	20 Megabyte	30 Megabyte
Complete Monographics System		
$648	$798	$848
Complete Color System		
$748	$898	$948
Complete VGA System		
$998	$1148	$1198

Super-386



Monitor Optional

20 MHz **$1578**

25 MHz **$1878**

25 MHz Cache **$2498**

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- 101 key enhanced keyboard
- 200 watt power supply
- Clock/Calendar
- Norton SI 23/31.6/31.6
- Landmark 25.5/32.6/43.5

Monitor & Hard Drive Options (20 MHz)

Floppy Only	40 Megabyte	80 Megabyte
Complete Monographics System		
$1698	$2958	$2298
Complete VGA System		
$1998	$2398	$2678

For 25 MHz add $298 — 25 MHz Cache add $898

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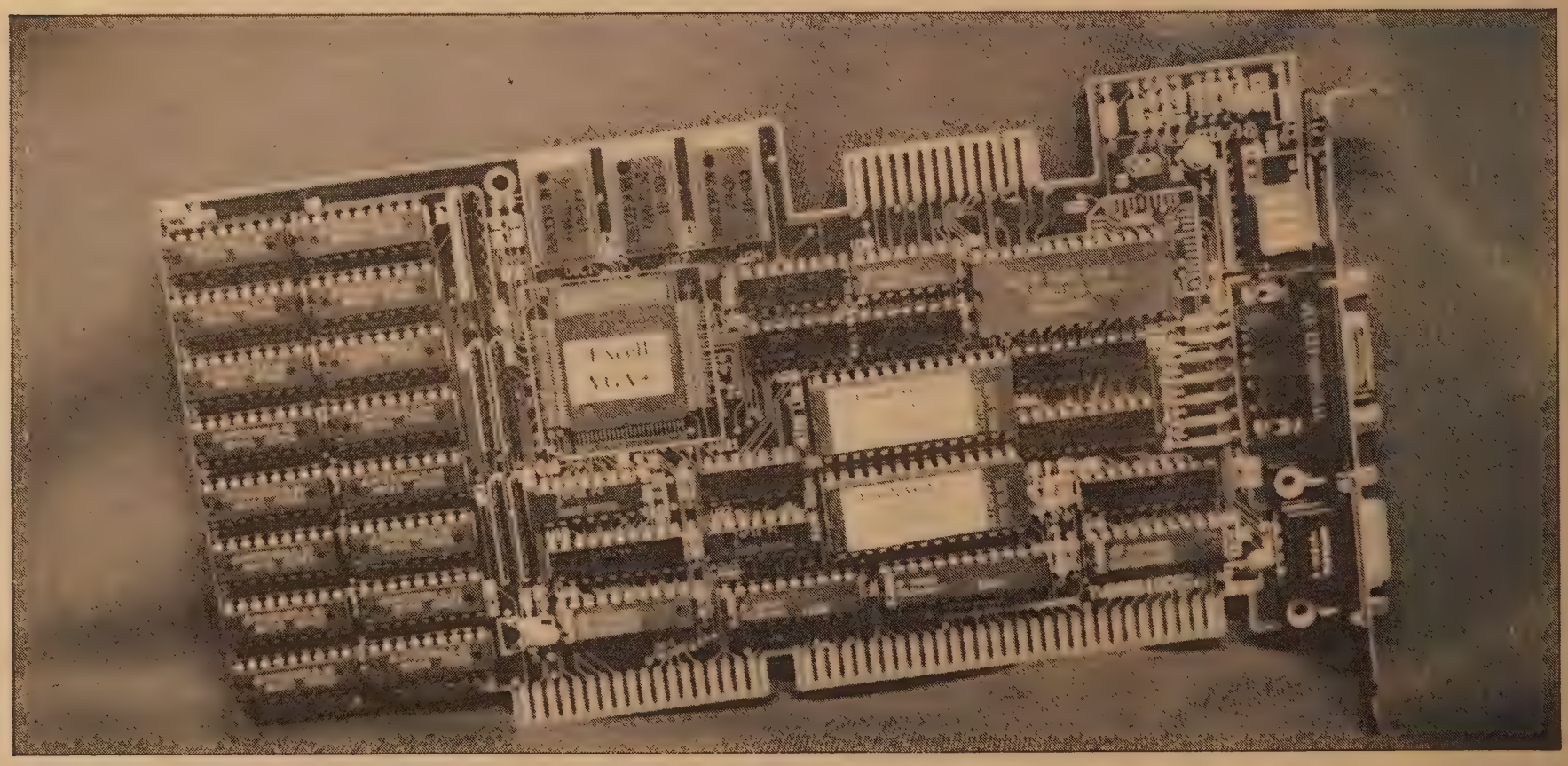
Chisholm Introduces Electronic Writing Tablet

Chisholm has announced Light Writer, an electronic writing tablet that operates in tandem with a Liquid Crystal Display projection panel. The combination of Light Writer and Chisholm's LCD projection panel called Looking Glass places the user's computer monitor on what amounts to an electronic blackboard. Through Light Writer, the user can point, highlight, or write information on the projected image. To write on a projected computer image with Light Writer, the user simply writes on the tablet with an electronic pen. Light Writer transfers the writing of the electronic pen from the tablet to the projected image. The Light Writer/Looking Glass combination automatically adjusts itself to accept a video signal from any IBM PC, PC-compatible, or Macintosh. The user can save Light Writer-generated information, a computer image, or a combination of the two. The tablet measures about 10"X 13" and connects to Looking Glass through Chisholm's Universal Prism, which provides an RS232 interface. Chisholm, 910 Campisi Way, Campbell, CA 95008. (408)559-1111.



VGA+ Card Places First In Price/Performance Test

The Excell VGA + 16-bit graphics card from Commax Technologies placed first against competing VGA cards in Character Write and Line Drawing video performance tests from Power Meter 1.3 by The Database Group, Inc. The Excell product also placed second in the Aggregate Video and Area Fill portions of the test. Available in both 256 K and 512 K configurations, the VGA+ card is priced less than comparable boards from ATI, Video Seven, and Paradise, which it outperforms in several categories. The Excell VGA+ is downward compatible with the complete spectrum of personal computer graphics standards—it runs older software as well as new programs. Register level compatibility includes IBM VGA, EGA, CGA, and Hercules modes. Drivers are available for *Lotus 1-2-3, PageMaker, Ventura Publisher, WordPerfect, WordStar, Windows, GEM, AutoCAD,* and *Framework II.* ($295/445) Mike McCeoy, Commax Technologies, Inc., 2031 Concourse Drive, San Jose, CA 95131. (408)435-5000.

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• T-5100 $3895
80386, 2 MB RAM,
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25 MS, EGA **$4595**

• T-5200 $4595
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25 MS, VGA **$4995**

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- Modem for T-1000. . . . . **299**
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- Compatible 5¼" ext. drive. . . . **199**
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- Carrying case for T-1600 . . . . . **89**
- 768K card for T-1000. . . . . **299**
- 1 MB memory for T-1200. . . . . **450**
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- 3 MB memory for T-3200. . . . **1095**
- 2 MB memory for T-5100 & T-5200 . . . . . **1049**

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USER GROUP NETWORK

BY MARY EISENHART

AppleFest Comes To Town

The show of the year for Apple II users (and a pretty good place for Mac users to go bargain-hunting too), AppleFest '89, is coming to Brooks Hall in San Francisco September 22-24. As usual, it features exhibits, conferences, and seminars for a variety of interests from business to creativity. Watch for our own **Mike Markowitz**, who'll be participating in a panel on games.

Our friend **Randy Dunagan** from **CompuMentor** wants folks in the nonprofit sector (that includes many user groups) to know about a seminar CompuMentor is hosting at AppleFest—"Socially Responsible Computing: Computer Resources for the Nonprofit Community," scheduled for 11:30 am on Friday, September 22. It will deal with two issues: informing nonprofits of available resources for computer donations and ways to support their existing computer systems, and showing computer-using individuals how they can help the good causes in their own areas. Speakers will be Randy himself, as well as **Joe Kohn**, renowned Apple II expert and volunteer troubleshooter, and **John Statton** of Apple Community Affairs. Special discount tickets are available to nonprofit staffers: call CompuMentor at (415)255-6040 for information and registration.

On August 9, the first meeting of **USA! (United Sysops Association!)** was held at that well-known Silicon Valley gathering spot, Coco's in Sunnyvale. A group of BBS operators founded the organization to help sysops around the world, particularly around the Pacific Rim area.

Meetings are planned for the second Wednesday of the month, and will address issues such as viruses, legal problems, hardware, and software. The September 13 meeting will feature a presentation by longtime sysop **William Strouse** on viruses and how to keep them out of your BBS. You can call William for more info at (408)453-3326.

It goes without saying that this group also has its own BBS—**Ring-of-Fire**, (408)453-3326.

We've received an unusually large number of BBS listings this month, so be sure to check our listings. A couple of highlights: **Julio Monroy** has started a new board in Menlo Park called the **Northern Lights BBS**. It features a local-echo message base for programmers that is updated nightly, and has over 70 Mb online. Says Julio, "All programmers, novice or expert, will be able to benefit from this message base." Northern Lights operates at speeds from 300 to 9600 baud at (415)324-2601.

Kenn Fong, the assistant sysop of the **KALW-FM BBS**, writes in to tell us that the board is off to a roaring start—and that he himself discovered the board through an ad in *MicroTimes*. The board features broadcast schedules and updates for the station, as well as lively discussion of words, language, old movies, music, and lots more. Kenn says, "We've got a lot of interesting traffic on language and culture, and one of our assistant Sysops, the Senior Evening Announcer **Bob Clark**, is a vintage movie maven." So if you'd like to join in, or just offer feedback to the station, give the board a call at (415)641-4373.

From **Tom Tcimpidis**, Famous Sysop, comes an update on the status of his **MOG-UR's EMS** board, (818)366-1238, which has been online since January 1981. It's a multi-user, multi-line BBS that runs 24 hours a day, with 24 active SIGs in its message base and a large file library with 26 file areas. Also, in addition to fairly standard 1200/2400 baud support, the board supports HST 14400 and 9600 baud modems, so you can transfer those files *fast*.

Speaking of fast modems, **Robert Holland** sent us email via MacNET about the special deal his company, Style Pro, is offering on Racal-Vadic V.32 9632VP modems, which support baud rates of up to 19,200 bps. Sysops can buy the modems from Style Pro for $795 (add sales tax in California). So if you'd like to speed your system up, or just have questions, give Robert a call at (408)942-5528, or dial up the **Style Pro BBS** (408)942-5529 (1200/2400, 8-N-1), or leave him a message on MacNET (RHolland).

That's all for now. Keep it coming. Send US Mail to MicroTimes User Group Network, 5951 Canning Street, Oakland, CA 94609. Send email to **microx** on The WELL (415/332-6106), uucp **{pacbell, hplabs, ucbvax, apple}!well!microx**, and **MICROTIMES** on MacNET. Stay tuned for our all-new CompuServe address. And send faxes to (415)652-4618 and (213)467-5486. ■

Bulletin Boards

INTERNATIONAL

Cassia Express. (065)344-9163. 300/1200/2400 24 hrs. Singapore. Sysop: N.M.Rahman.

FidoNet Argentina (054). (011)541-22-419. 8-N-1 3 PM-11 AM PST. The 1st fido node in Argentina has over 450 subscribers. Specializes in issues from S.A. PD software library to d-load. Sysop: Pablo Kinman.

Janis II. (03)255-8856. 24 hrs, 1200/2400/9600. Japan Newsbytes, USA Today, InfoMat magazine, Online Digital Music Review. Over 500 megs info & D/L Pgms on HDD. Sysop: Pete Perkins. Voice: (03)255-8880.

Remote Bulletin Board (Singapore). (065)445-1646. 9600/2400/1200 24 hrs. 218 MB Online (IBM upload/download). Sysop: Umar A. Rahman.

203

Terrapin Station. (203)656-0134. Grateful Dead Board. Sysop: Klaus and Gretchen Bender.

209

Bertha Board BBS (209)239-9853, 300/1200/2400, 8-N-1, 24 hrs. MS-DOS, others. 95 Mb online. Emphasis on programming. Uploads and downloads. No fee but registration required. Sysop: Kenneth Roach.

Don's Dental Service. (209)239-4828. 8-N-1, 24 hrs, 1200/2400. On-line dental supply catalogs, No. CA Society schedules, post-graduate course schedules from UCLA, UOP, and Cal. Free. Sysop: Don Carlson.

Oasis Software Library (209)823-2803, 300/1200/2400, 8-N-1, 24 hrs. Shareware and PD for IBMs and compatibles. No fee but registration required. Sysop: Tim Campi.

Silicon Realms. (209)754-5530. 300/(1200 Soon)9:30AM to 6:30AM. Formerly Motherload 64. Commodore, PET & Plus/4. Programmers board, Continuing & Short Story boards, FRPG. Sysop: Joe Commodore.

SMERDON'S CASEL (California Attractions, Sights and Entertainment Listing) (209)521-4910, 8-N-1, 24 hrs., 300/1200/2400. Information on over 700 things to do and see in California. Free. Sysop: Sharon Smerdon.

The Backdoor BBS (209)952-9430, 300/1200/2400, 8-N-1, 24 hrs. MS-DOS oriented board. Lots of software, online chess game, much more. Sysop: Randall Fox.

212

Lawyers Linked by Modem. (212)766-3788. Three hundred registrants. A BBS for law-related material. Sysop: Rees Morrison.

RadNET OnLine Services 24 hrs. Online computer network for Nuclear Medicine professionals. Offered through Compuserve. Regular o -line conferences. Call for information and registration. Voice phone: (212)856-6449.

213

Ann Leung's Best Buys. (213)372-4050. Real estate in LA South Bay. Best buys are compiled daily by Gloria Kung. Type GO BEST upon entry.

Ashton-Tate Support. (213)538-6196. Free technical support, answers to questions about Ashton-Tate software products.

Backroom BBS (213)420-7622, 8-N-1, 24 hrs., 300/1200/2400/9600. Very Mac, also Apple II and MS/DOS. Direct access to Applelink, but not by user.

Beaver Creek. (213)437-1410. 8-N-1 All but 4-9 PM. Sysop: John Campbell.

Beta RBBS. (213)393-9777. 1200/2400. Free entertainment BBS. Audio, video, DJ, music, movies, news and discussions. Sysop: Jason Lin.

Career-Point Information (CPI) (213)423-4999, 24 hrs., 10 lines on rotary. CD-ROM, INFO-MAT Magazine, USA TODAY, Writer's Board, Online Shopping and CHAT. "Where the professional & BBSing come together!" Over 1400 active users. Sysop: Mark E. Bishop. Voice: (213)428-0363.

Century Computers Amiga BBS. (213)697-2004, 24 hrs, 1200/2400. Sysop: Philip Marhqrst. Voice: (213)697-6977.

Chastity's Bistro. (213)656-3060. 300/1200/2400. 13 lines under DLX BBS software, private chats, 40 different channels for group chatting, message bases, file library, database system, a user matchmaker, user profile browsing. Must be over 18, voice verified.

Chat Line. (213)534-4311. Multi-line, multi-user interactive group & private forums. Downloads, Database.

CONTEL. (213)372-4050. Job opportunities in computer maintenance/service, job openings national/international. Type GO DSSD upon entry.

David's Amazing BBS. (213)459-5891. Conferencing (like the Well, but easier to use). Electronic bar; talk; matchmaking; 5 lines; unique software. Sysop: David Dennis.

Dial-Your-Match. (213)461-9899. Hollywood. (213)467-6776. Hollywood. (213)539-2448. Lomita. (213)633-4349. Downey.

Easy Reader Electronic Edition. (213)372-4050, 8-N-1. Free online publication. Includes movie times, editorial, 500 new classifieds each week and more. Online ordering of classifieds and letters to the editor allowed. Sysop: American TeleWeb.

Fly-In French Connexion. (213)470-6457. 24 hrs, 300/1200/2400. On-line games for 7 to 77, files to download, messages, classifieds. Sysop: Patrick R. Reiset. Voice: (213)470-7621.

Graphic Encounters BBS. (213)439-9000. 8-N-1, 24 hrs., 300/1200/2400. First logon requires password "computer." Email, MIS employment, graphics, CHAT, technical information, Oracomm, Sysop Corner. Operating 6 lines. Sysop: Bill Bloomer. Voice: (213)439-3135.

Grey Matter BSS & RCP/M. (213)971-6260. 300/1200/2400 24 hrs. Televideo and Timex/Sinclair support. Sysop: Ed Grey.

Hack Shack BBS. (213)867-4867, 8-N-1 noon to midnight, 300/1200/2400. PC software, hardware orientation. Sysop: Wally. Voice: (213)604-8739.

Home Loans BBS. (213)372-4050, 8-N-1, 24 hrs., 300/1200. Daily update of mortgage rates. Voice: (213)316-5508.

Homer. (213)490-0436. 24 hrs. Home automation, science, and general interest. Sysop: Rick Ellis.

ICN. (213)204-0646. 2400/1200/300 24 hrs. The place to buy/sell/trade collectibles (stamps, books, etc.)

Information Symposium. (213)258-5086. 300/1200/2400 8-N-1 24 hrs. Serving the Info. Professional, Tech. Info, M.I.S. Employment. MS-DOS; OS/2; graphics. Password req'd for access is "Micro." Sysop: William Bloomer.

KBBS. (213)672-8839, 558-0145, 654-7833. 8-N-1 300/1200/2400. 17 lines, LA's best Adult Social BBS. Free trial period, worldwide network, databases, USA Today news, group chat. Sysop: Dale Sys-Dude.

King & Queen Of Hearts BBS. (213)461-9899. 8-N-1, 24 hrs., 300/1200/2400. Multi-user, multi-interest, public/private chat, D/LI & U/L. For IBM/Commodore. Adults only. Sysop: Bob Overstreet.

LA JOBS. (213)372-4050. Los Angeles' most extensive database of Eng./tech jobs openings. Email direct to employers. Service provided by Los Angeles employers. No agencies. Type GO JOBS upon entry.

LAAUG-LINE .(213)559-7367, 24 hrs. Bulletin board of the Los Angeles Amiga Users Group. All Amiga owners are invited to join in the message base. Only LAAUG members may download files. Sysop: Gary Woolard.

Loan Line. (213)372-4050 Type GO LOAN upon entry. Voice: (213)316-5508

Lynzie's Motherboard. (213)650-0519. 300/1200/2400/9600 8-N-1 24 hrs. Matching, group and private chat system, local social events. W. Hollywood. Sysop: Lynzie Flynn. Also: (213)390-3239, 659-1982.and 9600 baud 650-1233.

MacUnderground. (213)326-4222. 24 hrs., 300/1200/2400. Macintosh only. News, reviews, apps., 80 megs online, updated weekly, full Mac support. Sysop: Tim Byars.

MEDCOM INFO BBS. (213)644-5580. 24 hrs., 300/1200/2400. Multi-user games, chat, computer art, PC-Pursuit access & info, news IBM-PC freeware/Shareware & mail.

MixNet. (213)661-1207, 8-N-1 1200/2400. Beta users wanted—no files—a self-organizing collective intelligence. Think globally, act locally—VT100. Sysop: Roger Eaton.

Mt. Hollywood Christian BBS. (213)666-6937. 8-N-1, 24 hrs. Sysop: John Janssen. Voice: (213)664-2302.

Ocular Skisis BBS. (213)596-9467, N-8-1, 300/1200/2400. A BBS devoted to eyecare and vision. Open to the public and free. Free consultations. Sysop: Michael Larkin, O.D.

Offworld BBS. (213)969-8897. 24 hrs., 300/1200/2400. Bisexual matching, intellectual discussion forum, an electric sanctuary for social revolution.

Oil Patch PC Board. (213)427-5980. 300/1200 8-N-1 Eves. only. Exclusively C. Libraries; utilities; source code; tutorials. Sysop: Rick Shoop.

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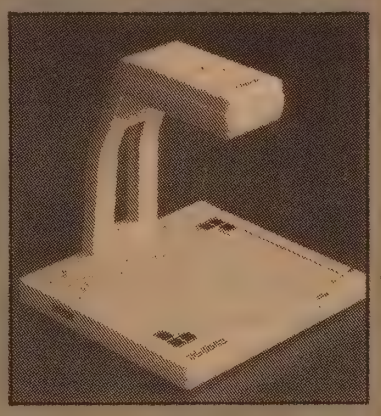

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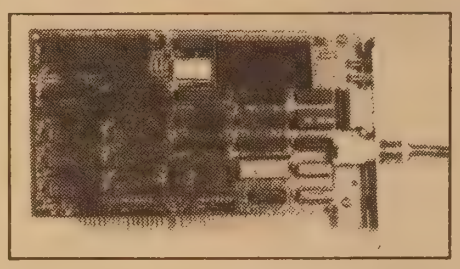

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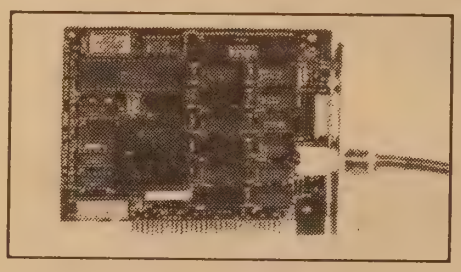
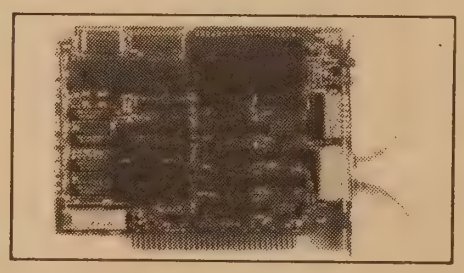


RELIABILITY

— Standard Arcnet
— 100% Novell compatible



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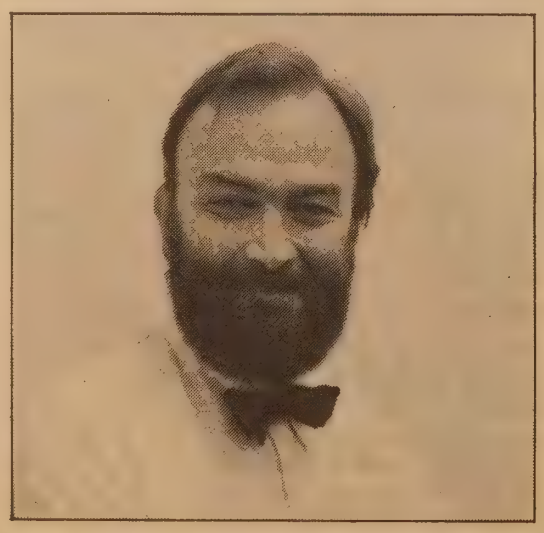

UNIX?

If **grep**, **chmod** and **nroff** are getting you down, find help fast in the *MicroTimes* UNIX column by Bennett Falk.

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The Great American Audio/Video Board. (213)469-6542. 300/1200 8-N-1 Eves. Reviews, essays, buyers guide, instruction. Sysop: Keith Bass.

The Midnight Express. (213)874-1022. 300/1200 24 Hrs. Unlimited email, Land of SPUR. Modifies GBBS Pro System. Games, stock exchange, quizzes and surveys. Sysop: Justin Case.

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Zorin Online Services. Online product information service offering keyword searching of over 50,000 products and services ranging from electronics, communications and hardware to complete systems, software and other areas. Fee and registration. Sysop: Zorin Data Systems. Voice: (213)399-3804.

214

Roundabout. (214)407-0655 8-N-1, 300/1200/2400. BBS for Dallas chapter of NAAFA, an organization dedicated to fighting discrimination against fat people.

216

Electronic Media Network. (216)241-2612. 1200 8-N-1 23 hrs. Provides link between employers and high-tech and highly skilled professionals.

305

Legal Access BBS. (305)473-9784. Ask a lawyer legal questions, discuss contemporary issues, hold mock trials, peruse summaries of Supreme Court cases. Florida. Sysop: David Danzig. Voice: (305)472-3621 eves.

312

Feminist BBS. (312)383-2059. 300/1200 24 hrs. Lively discussion, everyone welcome. Michelle Frost.

408

A32 BBS. (408)263-0299. 300/1200/2400. 24 hrs., All Macintosh, Red Ryder Host, email, news and files (40 megs). Mac disk libraries for sale. Sysop: John Griffen. Voice: (408)263-0398.

A32 User's Group. (408)263-0299. 2400. Disk libraries for sale.

Amiga Exchange. (408)375-1823. Amiga, Commodore. Runs Opus.

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Answer every question. Do not stay too long with any one question. Answer it as soon as you understand it and go on to the next question. Answer the questions with the way you presently feel.

Next to the questions you have a choice of 3 columns in which to mark your answer (for immediate results, fax to (415) 969-9241 Attn: Kevin Tighe):

(+) **Plus** - means mostly yes or decidedly so. (m) **Middle** - means uncertain, maybe, neither definitely yes or no. (–) **Minus** - means mostly no or decidedly no.

This is a free public service and there is no obligation. This is done with the idea that people can know and improve themselves.

⇓ Start

+ m –

1. Do you make thoughtless remarks or accusations which you later regret?
2. Is it hard on you when you fail?
3. When others are getting rattled, do you remain fairly composed?
4. Do you find yourself being extra active for periods lasting several days?
5. Do you browse through railway timetables, directories or dictionaries just for pleasure?
6. Do you resent the efforts of others to tell you what to do?
7. When asked to make a decision, would you be swayed by your like or dislike of the personality involved?
8. Is it normally hard for you to "own up and take the blame"?
9. Do you intend two or less children in your family even though your health and income will permit more?
10. Do you have a small circle of close friends rather than a large number of friends and speaking acquaintances?
11. Are your actions considered unpredictable by others?
12. Do you often sing or whistle just for the fun of it?
13. Do you get occasional twitches of your muscles when there is no logical reason for it?
14. Does "everything" seem glorious to you even though you are aware of some things that should be changed?
15. Would you prefer to be in a position where you did not have the responsibilities of making decisions?
16. Would you rather give orders than take them?
17. Do the affairs of other people interest you very much?
18. Do you put quite a few depreciations of others into your conversation?
19. Do you consider too much money is being spent on social security?
20. Are you considered warm-hearted by your friends?
21. Do you act impulsively rather than deliberately?
22. Do you make efforts to get others to laugh or smile?
23. Is your voice quite varied rather than calm?
24. Can your world "cave in on you" without your being upset?
25. Do you say little except in response?
26. Are you strict in the manner of discipline rather than being easy going?
27. Are you readily interested in other people's conversation?
28. Do you refrain from complaining when the other person is late for an appointment?
29. When hunting or fishing, do you feel concern for the pain you inflict on game, live bait, or fish?
30. Do you find it easy to express your emotions?
31. Are you generally careless of accepted rules for protecting your health?
32. Are you sometimes considered by others a "spoil sport" or "wet blanket"?
33. When unexpected things happen, do some of your muscles have jerking motions?
34. Are you constantly happy, even though there is no reason for it?
35. Do you speak slowly?
36. Would you admit you were wrong just to keep the peace?
37. Do you give a judgement only after looking at the pros and cons?
38. Do you consider there are other people who are definitely unfriendly towards you and work against you?
39. Are you normally considerate in your demands on your employees, relatives and friends?
40. Do you have only a few people of whom you are really fond?
41. Do you take reasonable precautions to prevent accidents?
42. Do you speedily recover from the effects of bad news?
43. Does the idea of talking in front of people make you nervous?
44. Do you ever get a "dreamlike" feeling towards life when it all seems unreal?
45. Do you "circulate around" at a social gathering?
46. Do you often keep your opinions to yourself because they do not seem important enough to tell others?
47. Do you sometimes think others are looking at you or talking about you, when they are really not doing so?
48. When you criticize, do you at the same time try to encourage?
49. If you saw an article in a shop which was obviously mistakenly marked lower than its correct price, would you try to get it at that price?
50. Do some people consider you to be cheerful?
51. Do you get into trouble occasionally?
52. Does life seem worthwhile?
53. Do you have a particular hate or fear?
54. Do you spontaneously give things away even though you have a use for them?
55. Do you prefer to be an onlooker rather than participate in any active sport?
56. Are you so sure of yourself that you sometimes annoy others?
57. Do you find it easy to be impartial?
58. Do you completely condemn a person because he is a rival or opponent in some aspect of your relations to him?
59. Have you a definitely set standard of courteous behavior in front of other members of your family?
60. Does emotional music have quite an effect on you?
61. Would you "buy on credit" with the hope that you can keep up with the payments?
62. Do you often "sit and think" about death, sickness, pain and sorrow?
63. Do you remain upset for some time following an accident or other disturbing incident?
64. Do you hold on to things for which you have no real use?
65. Can you "start the ball rolling" at a social gathering?
66. Are you rather indifferent to maintaining the dignity of your job or place in life?
67. When hearing a lecturer, do you sometimes experience the idea that the speaker is referring entirely to you?
68. Do you give much time in your conversation to the criticism of people and things?
69. Do you consider the good of all concerned rather than your own personal advantages?
70. Are you openly appreciative of beautiful things?
71. Do you make plans well in advance of an event and then carry them out?
72. Do you often ponder on past misfortunes?
73. Does "external noise" rarely interfere with your concentration?
74. Do you sometimes give away articles which, strictly speaking, do not belong to you?
75. Do you pay less attention to things going on around you than most people?
76. Are you sometimes considered "overbearing"?
77. Are you inclined to be jealous?
78. Do you accept criticism easily without resentment?
79. Do you consider the modern prisons-without-bars system "doomed to failure"?
80. Do you greet people cordially?
81. Do you tend to put off things and then discover that it is too late?
82. Does the youth of today have more opportunity than that of a generation ago?
83. Are you usually undisturbed by "noises" when you are trying to rest?
84. Do you throw things away only to discover that you need them later?
85. Is it easy for you to get yourself started?
86. Would you give up easily on a given course if it were causing you considerable amount of inconvenience?
87. Are there things about yourself on which you are touchy?
88. Do you rarely suspect the actions of others?
89. When you see someone in pain, are you sympathetic enough as to want to do something about it?
90. Do you live the kind of life where you have only a few expressions of enthusiasm?
91. Do you break out in more explosive words or actions than would be expected from the cause?
92. Do you sometimes wonder if anyone really cares about you?
93. Do you bite your fingernails or chew objects?
94. Do you sometimes feel compelled to repeat some interesting item or habit?
95. Are your interests and activities modified somewhat by someone else's?
96. Do you turn down responsibility because you doubt your fitness to cope?
97. Are you prejudiced in favor of your own school, college, club, team, etc.?
98. If you have a disagreement, do you think as well of the person afterwards?
99. If you were invading another country, would you feel sympathetic towards conscientious objectors in thin country?
100. Is you facial expression varied rather than set?
101. Can you be a stabilizing influence when others get panicky?
102. Would it take a definite effort on your part to consider the subject of suicide?
103. Do you ever get a single thought which hangs around for days?
104. When you have an opinion, can you simply state it without outlining how you arrived at it?
105. Are you a slow eater?
106. Would you consider yourself energetic in your attitude towards life?
107. Are you scientific in your thinking?
108. Is it hard to please you?
109. Would you stop and find out whether a person needed help even though they had not directly asked for it?
110. When passing a beautiful child, do you avoid showing interest rather than looking and smiling?
111. Do you pay your debts and keep your promises when it is possible?
112. Does a minor failure on your part rarely trouble you?
113. Do you sleep well?
114. Do you sometimes feel that you talk too much?
115. Do you prefer to take a passive role in any club or organization to which you belong?
116. Do you seek to have your own way rather than being likely to give in to the wishes of others?
117. Is your opinion influenced by looking at things from the standpoint of your eduction, experience or occupation?
118. Do you usually criticize a film or show that you see or a book that you read?
119. Would you use corporal punishment on a child aged 10 if he/she refused to obey you?
120. Do you smile much?
121. Do you often make tactless blunders?
122. Do you remember illness or pain for some time?
123. Do you ever get disturbed by the noise of the wind or a house "settling down"?
124. Do you get very ill at ease in disordered surroundings?
125. Provided the distance was not too great, would you still prefer to ride than walk?
126. Do you try to convert others to your ideas about several subjects on which you are not an expert?
127. Are personal interests unable to sway you from sound decisions?
128. Do you get frustrated at not being able to do something, rather than finding a substitute activity or system?
129. Have you made more than one loan which you were persuaded to do against your wishes and were never repaid?
130. When recounting some amusing incident, can you easily imitate the mannerisms or the dialect in the original incident?
131. Do you frequently take actions, even though you know your own good judgement would indicate otherwise?
132. Do you often feel depressed?
133. Are you aware of any habitual physical mannerism such as pulling your hair, nose, ears and such like?
134. Does disorder bother you so much that you feel you must take immediate and drastic action against it?
135. Do you sometimes get quiet exhilarated?
136. Can you accept defeat easily without the necessity of "swallowing your disappointment"?
137. Can you see things from someone else's point of view when you wish to?
138. Do you rarely express your grievances?
139. Are you in favor of color bar and class distinction?
140. Would you rather be with adults all the time rather than with children part of the time?
141. Can you quickly adapt to new conditions and situations even though they may be difficult?
142. Are you sometimes completely unable to enter the spirit of things?
143. Do some noises "set your teeth on edge"?
144. Do you work in "spurts", being relatively inactive and then furiously active for a day or two?
145. Do you frequently stay up late?
146. Does the number of uncompleted jobs on hand bother you?
147. When voting, do you study the candidates rather than voting the same party straight?
148. Do you consider the best points of most people and only rarely speak slightingly of them?
149. Do the "petty foibles" of others make you impatient?
150. Do people enjoy being in your company?
151. Do you usually carry out assignments promptly and systematically?
152. Do you laugh or smile quite easily?
153. Do children irritate you?
154. Can you quietly watch another work, without feeling you must insist on helping when they indicate they would rather do it themselves?
155. Are you less talkative than your associates?
156. Are you definite and emphatic in voice and manner?
157. Do you place too high an importance on your own interests and fields of knowledge in comparison to others?
158. Do you suspect someone does not like you and criticizes you to others?
159. Would you assist a fellow traveller rather than leave it to the officials?
160. Are you cordial only to close friends, if at all?
161. Do you quickly return to normal rather than being disturbed for a while after seeing a tragic movie or play?
162. Does some inferiority make you feel sad?
163. Is it easy for you to relax?
164. When you "really want to do something", do you feel your desires are paramount to all opposition?
165. Do you attempt to "start things in your are"?
166. Do you feel strongly convinced of the correctness of your opinions when in a controversy, excluding those subjects about which you are an expert?
167. Do you find it annoying to have any criticism made of you, even though it is justified and from which you could profit?
168. Having settled an argument, do you continue to feel disgruntled for a while?
169. Would you stand by and fail to protect some animal from needless suffering?
170. Do you give a kiss, hug, pat on the back or otherwise manifest pleasure in meeting friends you haven't seen for some time rather than just being polite?
171. Do you find it hard to get started on a task that needs to be done?
172. Is the idea of death, or even reminders of death, abhorrent to you?
173. Do you sometimes get so frightened or apprehensive that you have physical reactions?
174. Do you find yourself "going off in all directions at once"?
175. Could someone else consider that you were really active?
176. Is your opinion of your abilities less than the facts warrant?
177. Do your emotions sway your judgement much?
178. If you lose an article, do you get the idea that "someone must have stolen it or mislaid it"?
179. Are you opposed to the "probation system"for criminals?
180. Are you friendly in voice, attitude and expression?
181. Do you "stand up" well under difficult situations?
182. Do you feel upset about the fate of war victims and political refugees?
183. Do you spend much time on "needless worries"?
184. Does life seem rather vague and unreal to you?
185. Do you frequently find yourself "waiting" for something to happen instead of taking action?
186. If you thought that someone was suspicious of you and your actions, would you tackle them on the subject, rather than leave them to work it out?
187. In a disagreement, do you find it hard to understand how the other person fails to see your side and thus agree with you?
188. Do you spend very little if any time grumbling about the conditions of your work?
189. Are you usually truthful to others?
190. Do mere acquaintances appeal to you for aid or advice in their personal difficulties?
191. Do you spend too freely in relation to your income?
192. Do you sometimes feel that your age is against you (too young to too old)?
193. Can you take "calculated risk" without too much worry?
194. Do you have spells of being sad and depressed rather than staying about the same level?
195. Do others push you around?
196. Do you tend to hide your feelings?
197. Do you make allowances for your friends where with others you might judge more severely?
198. Are you frequently dismayed by the actions of others, not being able to understand their duplicity or stupidity?
199. If you were involved in a slight car accident, would you really take the trouble to see that any damage you did was made good?
200. Do you consider you have many warm friends?

Name _____ **Date** _____

Address _____ **City** _____

State _____ **Zip** _____

Phone (home) _____ **(work)** _____

Occupation _____ **Age** _____ **Sex** _____

For immediate results, fax your answers to this number:
415-969-9241
Attention: Kevin Tighe

or mail to:
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Attention: Kevin Tighe

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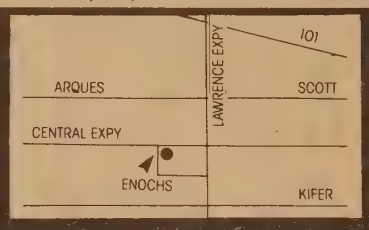

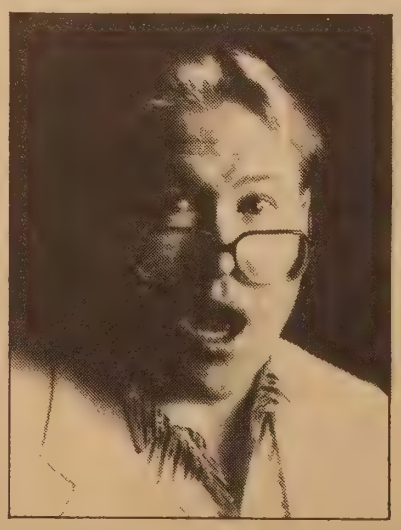

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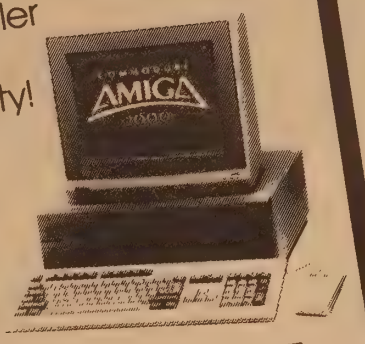

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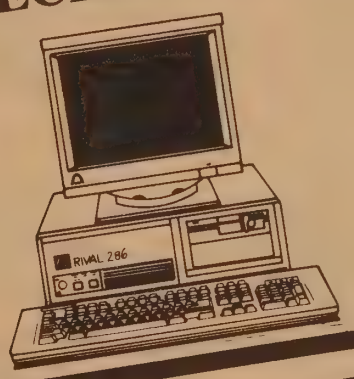

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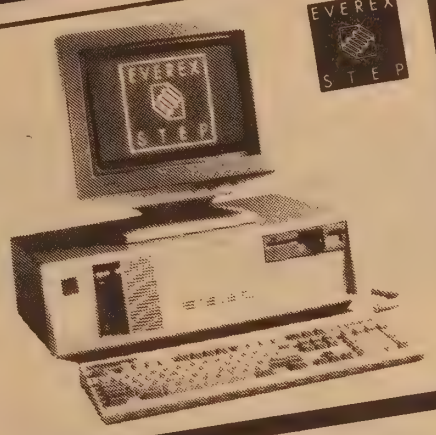

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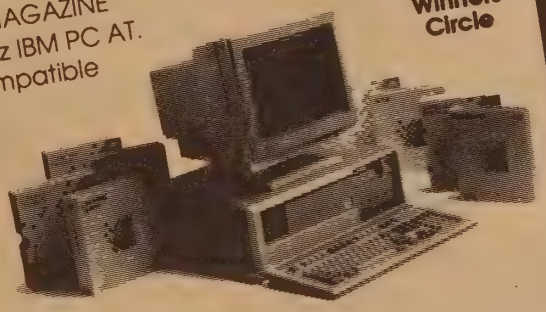

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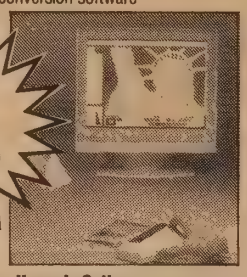

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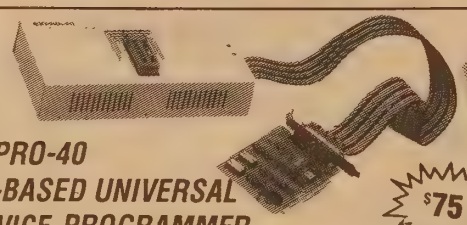

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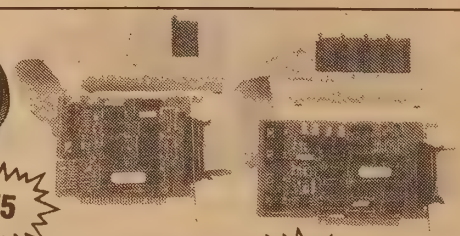

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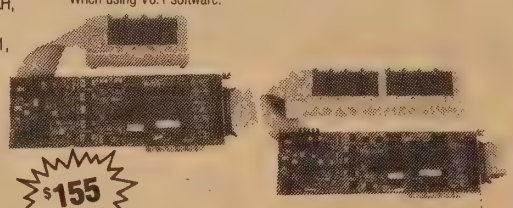

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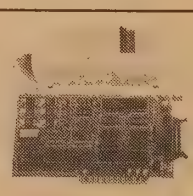

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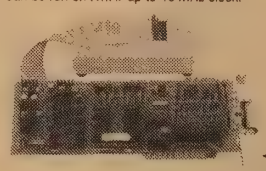

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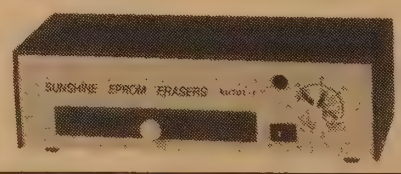

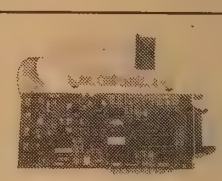

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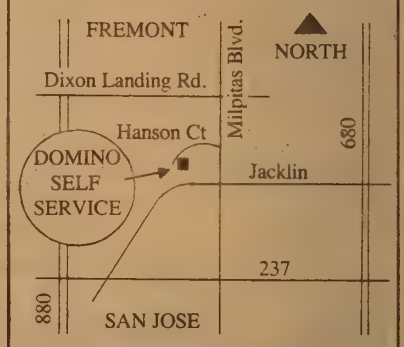

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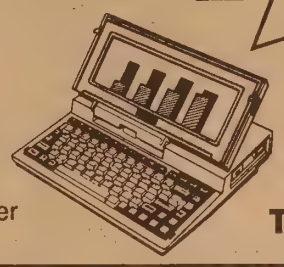

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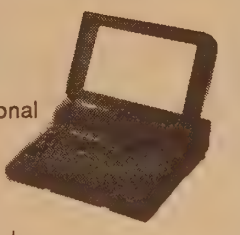

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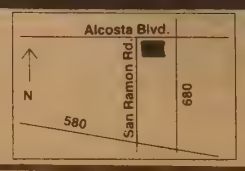

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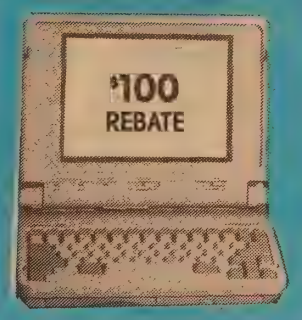

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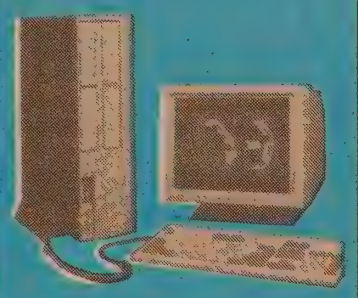

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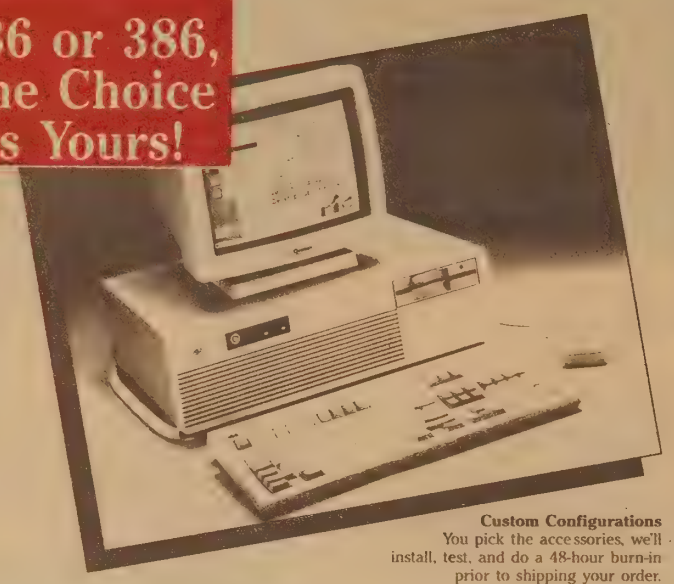

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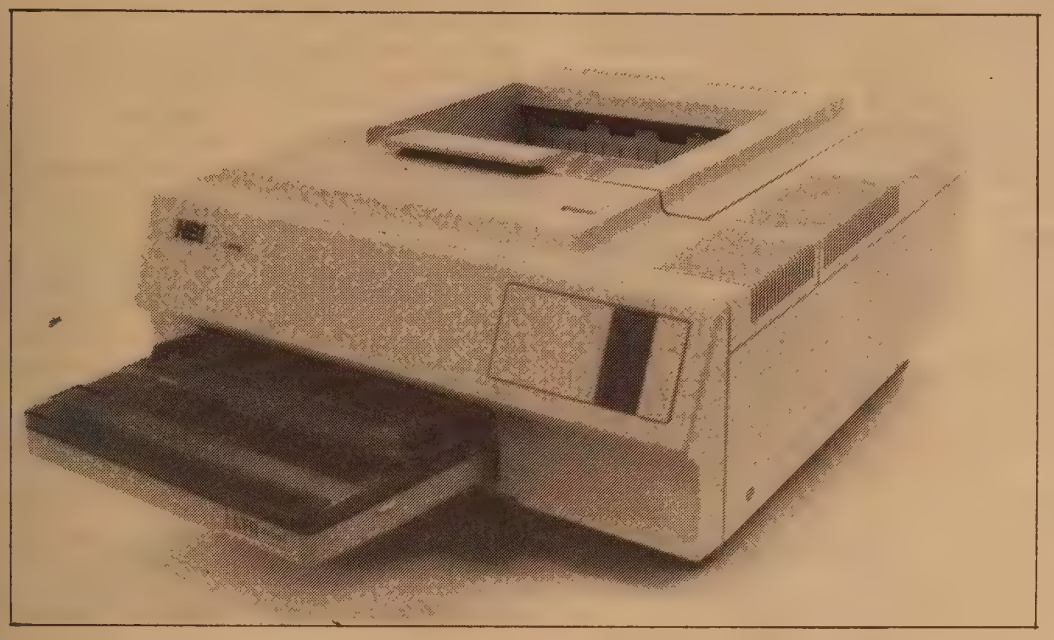

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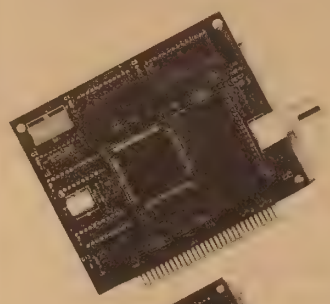

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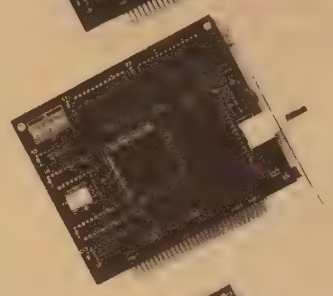

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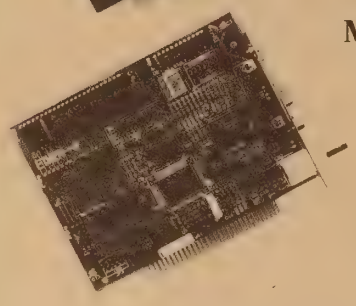

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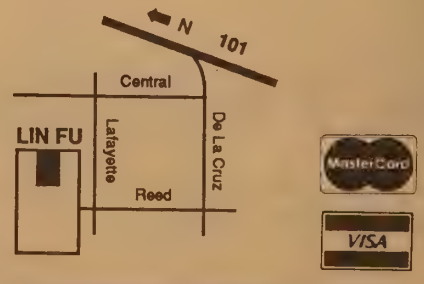

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IBM PC Users' Group Of The Redwoods (PCUGR). (707)538-8710. PD and shareware library, membership information, messages, chat. All PC and clone users invited.

MacComm Connection. (707)795-1721. 24 hrs., 300/1200/2400. A Macintosh and Commodore oriented board. Also free advertisement section. Free to all. Sysop: Randy L. Lust.

Metropolis. (707)528-1345, 300/1200, 24 hrs. Comic books, superheroes, science fiction, contests, fantasy, role-playing games, media forum, and prizes.

Nite Owl Motel. (707)823-3052, 300/1200/2400, 9 PM to 8 AM. Network.

North Bay Billboard. (707)552-9758. 300/1200/2400. IBM, Mac, Atari ST, 20 Megs. In Vallejo.

PC Connection BBS. (707)437-5203. 24 hrs., 300/1200/2400. Over 2,000 programs online. Support IBM and compatibles. Sysop: Lenny Erickson.

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Rapture. (707)585-9307, 300/1200.

SCF. (707)545-0476, 300/1200/2400. Network.

SCRA/HSC. (707)527-7734, 300/1200/2400.

Solano Community BBS. (707)437-6787. 300/1200/2400 8-N-1 24 hrs.

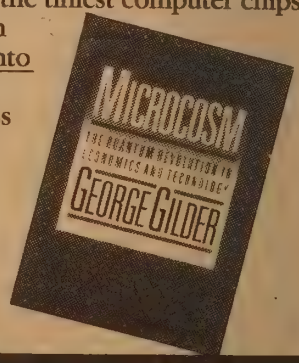
UPCOMING EVENTS AT STACEY'S

SCOTT KIM —September 9th
from 12 noon to 1 pm

SCOTT KIM will be demonstrating the Letterforms & Illusion software based on Kim's earlier ideas developed in Inversions. Letterforms & Illusion is a collection of entertaining puzzles, activities and fonts for the Apple Macintosh computer that challenges the eye as well as the mind. Letterforms & Illusion is for people with an interest in popular science, graphic design, geometry, puzzles and visual problem solving.

GEORGE GILDER —September 20th
from 7 to 8:30 pm

George Gilder takes the reader inside the tiniest computer chips as well as the greatest minds of Silicon Valley in his new book. Microcosm: Into the Quantum Era of Economics and Technology. George Gilder will discuss his new book and answer questions.



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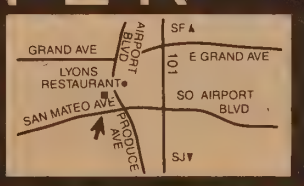

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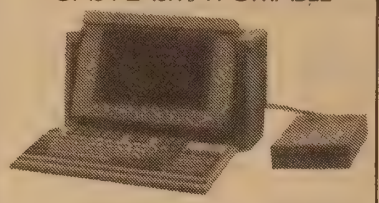

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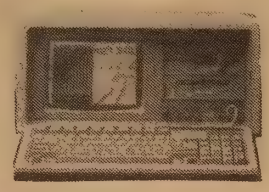

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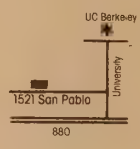

What's Happening?

Check the MicroTimes Calendar of Events in this issue for computer-related classes, seminars, and shows in your area.

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Sonoma Users Group. (707)996-7922, 300 baud.

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Star Trek. (707)792-2572. 300/1200.

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Adventurer's Castle. (714)871-4119. 300/1200 24 hrs. Real time gaming. Sysop: William E. Hart.

Amiga Friends. (714)870-4754. 300/1200/2400 24 hrs. Run by one of S. California's largest Amiga clubs. Special interest sections, downloads, club activity information. Sysop: Scott Thayer.

Amiga Inn. (714)272-5881. 24 hrs., 300/1200/2400. Sysop conference, large BBS lists, programming, downloads, more. Sysop: Steve Snyder.

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The Cheese Factory. (714)788-9894. 24 hrs., 300/1200/2400. Official BBS of the Moreno Valley Macintosh User's Group. Macintosh PD software library available for d-load. Sysop: Mike White.

The End of the Line. (714)645-6581. 300/1200/2400 8-N-1 24 hrs. Running Wildcat BBS software. Pub. dom.& shareware for IBM & compatibles. Private/pub. message bases. Scorecast data files. Sysop: Bob Kelly.

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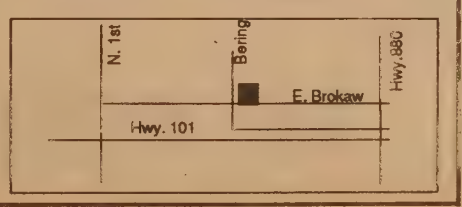

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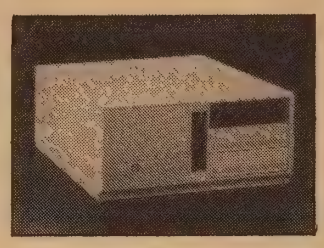

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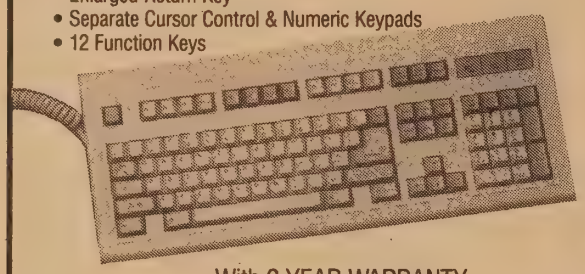

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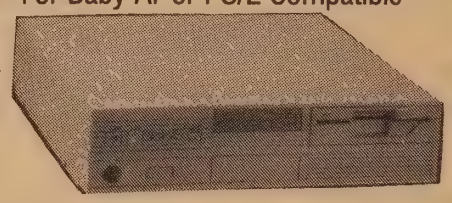

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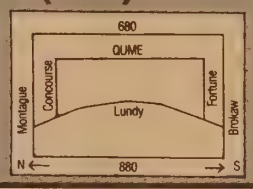

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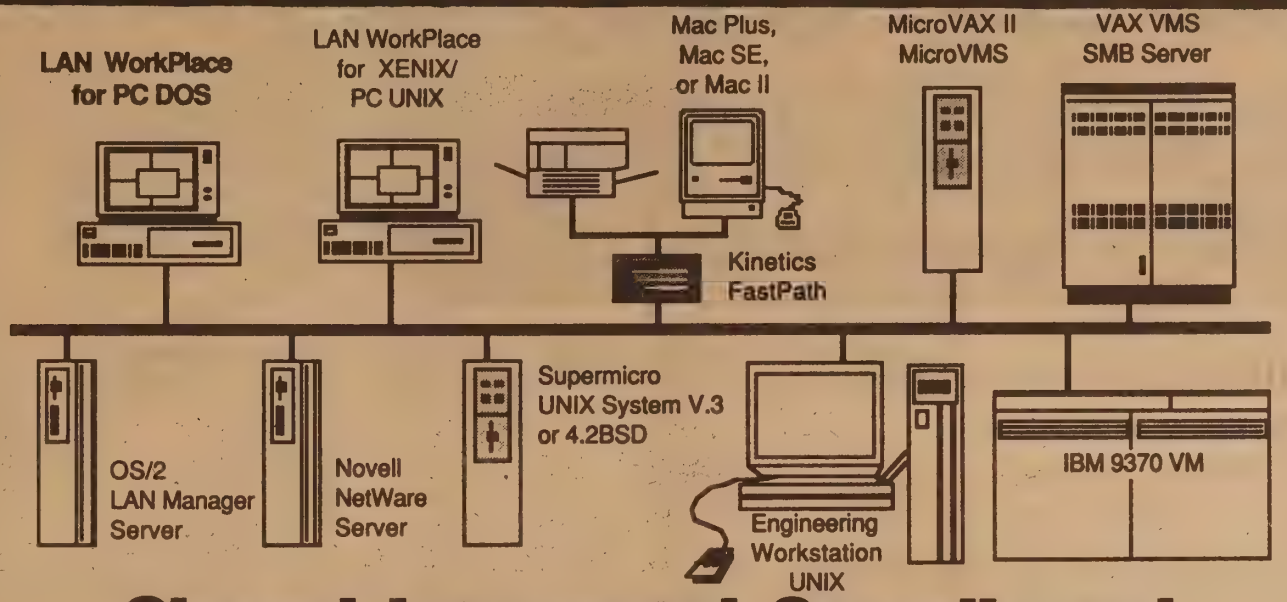
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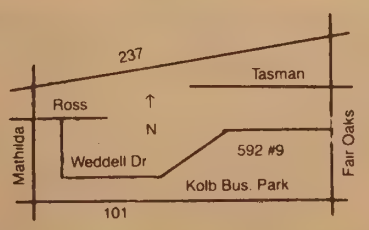

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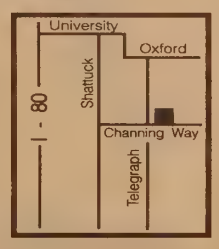

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Business Computerization User Group. Group forming. Write 6938 Buckingham Blvd., Berkeley, CA 94705, or call (415)848-2080.

California Genealogical Society Computer Interest Group. Meetings: 2nd Sat.- odd months Genealogical Society Library, San Francisco.

Computer Associates Users Group. Meetings: 3rd Wednesdays, 6:30 pm, 1500 Van Ness Ave., Call: Brenda Goldstein, (415)864-6770.

Computers & Law Assoc. Meetings: McGeorge School of Law, 3200 Fifth Ave., Sacramento, CA 95817.

CYMA/McGraw-Hill Users Group Meeting. Meetings: Monday, October 24, 3:00-5:00 pm, McGraw-Hill Publications Building, 425 Battery St., San Francisco. Meet CYMA professionals and learn how to get the most from your software. Call: (415)839-7466.

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East Bay User Group. Meetings: 3rd Wednesdays, 7 pm, 12500 Campus Dr., Oakland, Rm R-7, Call: (415)436-2453.

Entrepreneurial Support Group. CEO. Meetings: SASE, P.O. Box 2781, San Rafael, CA.

Ham Radio Computer Packet Group. Meetings: 2nd Fridays, 8 pm, Salvation Army, 4600 Appian Way, El Sobrante. Learn how to use your computer to broadcast all over the world with the fascinating world of Ham Radio. Call: Bob Fields, (415)237-3761.

High Tech Gays. Meetings: 2nd Sundays, Part of the National Gay & Lesbian Task Force. Call: (408)993-3830.

High Technology Entrepreneurial Council. Meetings: Wednesdays, 6:30 pm, Piedmont Community Center, 711 Highland Ave., Piedmont. HTEC is a nonprofit corporation dedicated to providing software developers and other high tech entrepreneurs a forum for developing marketing strategies, building business relationships and exchanging experience and information. Call: Rachel Munoz, (415)339-3895.

Independent Computer Consultants Association (ICCA). A national professional association dedicated to ethical standards in computer consulting. Provides a computer consultant referral service. Meets monthly. Call: (415)441-2948.

Microcomputer Users of Santa Cruz Fog Affiliate #116. Meetings: 2nd Thursdays, Green Acres School, 966 Bostwick Lane, Santa Cruz. This facility is wheelchair accessible. Call: Barney, (408)476-0504.

MORE: Modemusers Of The Redwood Empire. Meetings: Thurs. July 14; Fri. Aug. 9; 7 PM, Roundtable Pizza, Highway 12 @ Stony Pt. Free membership for modemers who want to get together and talk about local boards. Includes novices to techno-wizards. Call (707)546-5203.

Mt. Diablo Technology Association. First meeting: Wednesday, Sept. 14. Others monthly at Michael's Restaurant in Walnut Creek. Lunch and evening meetings, send for calendar. Back by popular demand. Will explore common concerns in industry and educational developments. Call: Deborah Scott, (415)932-4828

Network Users Group (NUG). Next meeting: July 7. Call for location and time. Panel discussion of workgroup software with several major software manufacturers represented. Call (415)655-6500 for details.

North Bay Users Group (NBUG). Meetings: 2nd Thurs. 7:30-10 PM, 201 Maine St., Vallejo, CA. Family Computer Club dedicated to all forms of computing. Determine market opportunities, group research projects. (415)564-6669.

Northern California User Group. Meetings: Every 3 months. For schedule, Call: Ken Lebeiko, 881-2652.

Nota Bene User Group. Meetings: 3rd Tues. or Thurs., 7:30 PM Berkeley or Peninsula. For location and date, call Thomas Ross, (415)845-2410.

PASS: Professional Association of Secretarial Services. Meetings: 2nd Saturdays 11:30 AM, Oakland or San Mateo. Call: Nina Feldman, (415)655-4296.

Pracsa, for Sysops & Users. Meetings: 2nd Wednesdays, 6:30 pm, Coco's Restaurant, 1305 South Mary, Sunnyvale. Call: Bill Strouse, (408)453-3321.

ProTel (Professionals In Telecommunications) Meetings: Monthly. Holiday Inn, 1221 Chess Drive, Foster City. ProTel is a network organization for people interested in telecommunications. Leave a message at (415)227-5637 for information.

San Jose User Group. Meetings: First Wednesdays. For location and time, Call: Hanna Varniz, (408)984-

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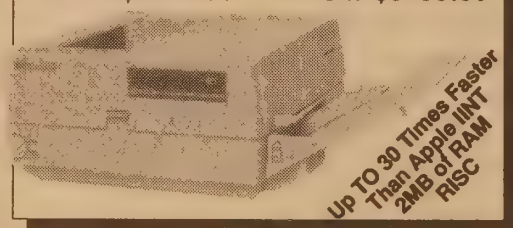

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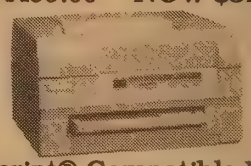
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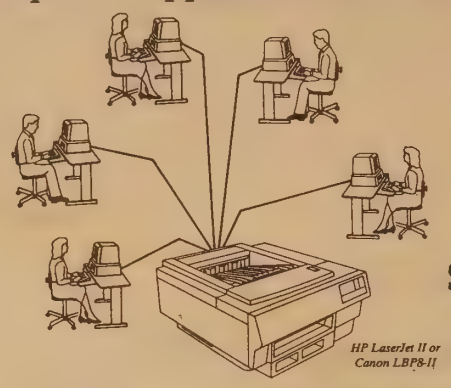

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Silicon Valley Computer Society. Contact Kent Stafford (408)286-2969. Or write to 2464 El Camino Real #190, Santa Clara, CA 95051.

Software Entrepreneur's Forum (SEF). Meetings: 3rd Thurs. 1875 Embarcadero Rd., Palo Alto. Helps individual software developers and startup software companies. Call for complimentary newsletter. (415)854-7219.

Technology Executive Roundtable (TER)Meetings: Fourth Tuesdays, 6:00 pm, Santa Clara.Call: Jenny Hoyt,(408)997-1826.

The Hispanic Computing Association. Meetings: 3rd Thursdays, DataDesigns/American Music, 2388 Mission St., SF. Spanish/English Computer Information, PC & Mac presentations and solutions. Call: Juan Lira, (415)824-8337.

United Sysops Association (USA). Meetings: 2nd Wednesdays, Coco's Restaurant, 1305 S. Mary Avenue, Sunnyvale. The emphasis of the group is to help the sysops around the world, and especially in the countries of the Pacific Rim. Call: William Strouse, (408)453-3321.

Valley of the Moon Users Group. Meetings: 2nd Saturdays monthly, 10:00 AM, Moose Lodge, Sonoma. All systems welcome. BBS, 300 BAUD, 24 hours, (707)996-7922.

Women's Special Interest Group. 7:30 pm, Hewlett-Packard, 5301 Stevens Creek Blvd., Santa Clara. For all women interested in computing. Call: Rita Zokaei, (415)574-8225

User Groups

AMIGA

ACCESS (The Amiga And Commodore Computer Enthusiasts Society). Meeting and library sessions 2nd Tuesdays, 7 pm, at Livermore Airport Terminal building. Paul Tibbals (415)829-6053 for details.

Amiga Addicts Anonymous. Meetings: Newsletter, public domain library, demonstrations. Write PO 4669, Walnut Creek, CA 94596. Call: (415)689-3453

Amiga East Bay Info Exchange (AEBIE). Meetings: 2nd Tues.,,7 to 9 pm, 11185 San Pablo Ave., El Cerrito. Write to P.O. Box 485, Pinole, CA 94564.

ASCITEC: The Amiga Science & Technology Users Group. Meetings: 2nd Thurs.,, 5-7 pm, Lockheed, B/157, Rm. 4-C, Sunnyvale, CA. Scientific/Video Applications. Classes available.

AUGment - Amiga Users Group of Silicon Valley. Meetings: 2nd Fri., Write to P.O. Box 1863, Fremont CA 94538 for more info.

AUM—Amiga Users Of Marin. Meetings: Third Wednesdays, 7:30 pm,, room 191, Science Center, College of Marin, Kentfield. Call: Bob Galvan, (415)924-5384.

Bay Area Amiga Developers Group (BADGE). Meetings: 3rd Thurs.,, 8 pm, Turing Auditorium, Stanford University, Stanford, CA. For all Amiga programmers. No membership fee.

CWEST Bay Area Commodore Users Group. Meetings: Third Thursdays, 7:00 pm,, Fort Mason, Bldg. C, Rm. 215. Support C-64/128 and Amiga. New Users welcome. Write PO 146731, San Francisco, CA 94114-6731.

HAUG (Hayward Amiga Users Group). Meetings: 1st Wednesdays, 7 pm,, Mulford Gardens Community Center, San Leandro. Call: Ken, (415)352-0220, or Kenny, (415)351-7349.

Northern California Amiga Club. Meetings: Second Saturdays, 2 pm,, Rico's. Supports Amiga. Write: PO 54, Bella Vista, CA 96008.

SMAUG (Salinas-Monterey Amiga Users Group). Meetings: 3rd Tues., at 7 pm,, Seaside Library, 550 Harcourt Ave., Seaside, CA. Write PO 776, Castroville, CA 95012. Call Richard Binsacca at (408) 678-2518.

SVAUG-Scotts Valley Amiga Users Group. Meetings: 2nd Thursday, 7:00 pm,,The Computer Room, Kings Village, Scotts Valley.

Vallejo Amiga People (VAMP). Meetings: 2nd Tues.,, 6:30 pm, , Software 1st, Vallejo Corners Shopping Center. Contact Bill Braun at (707) 554-0263.

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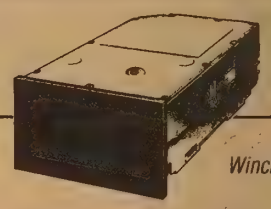

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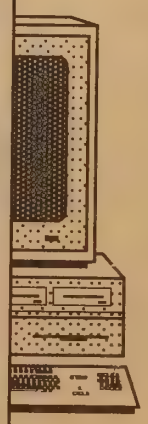

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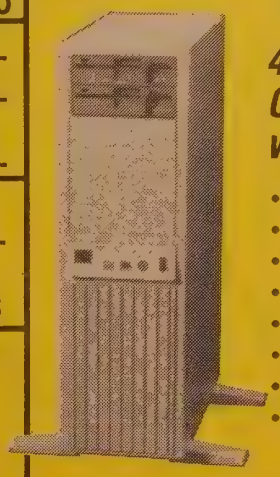

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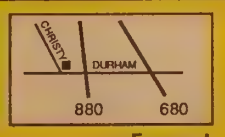

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Apple Pickers of the Redwood Empire. Meetings: 2nd Sat.,, 10 am, , Santa Rosa JC, Shuhaw Hall, Rm. 1735. Call for sample newsletter. (707) 763-8322.

Apple Sac. Meetings: 1st and 2nd Wednesdays, 3rd Tuesdays, 7 pm,, Madison School on Harrison St. in Sacramento. Newsletter, demos, swap meets, PD files, BBS.

B.E.A.R. Apple II National Users Group. Meetings: send S.A.S.E. to B.E.A.R., 4719 Meridean Ave. #401,San Jose 95118. Printshop & Appleworks files, monthly newsletter.

Diablo Valley Apple Users. Meetings: 1st & 3rd Fri.,, 7 pm, , Willow Creek Ctr., 1026 Mohr Lane, Concord, CA. SIG's meet monthly. Featuring library of pub. domain software & club's DOM's. Newsletter, demos, group buys hard/software.

GravenStein Apple IIGS Users Group. Meetings: 3rd Saturdays, 10:00 am,, Coddingtown Mall, Santa Rosa. User group to explore new and existing programs and uses for the IIGS, to order equipment and material as a group for quantity discounts and to encourage the use and development of the IIGS am,ong current, new and potential users. Call: Aaron Lamar, president, 938-8479.

San Francisco Apple Core. Meetings: 3rd Saturdays, 10 am,, Daly City Library, 40 Wembley. BBS, SIGS, PD/SW library, Help List, Newsletter, more. Call: 398-2335/771-5830.

San Leandro Apple User Group. Meetings: 1st Thursdays, San Leandro HS, Rm. 213. New owners to experienced users welcome. AppleWorks, software and telecommunications SIGs meet monthly. Call: (415) 483-6046.

Society For The Prevention Of Cruelty To Apples. Meetings: 2ndWednesdays, 7:30 pm,, Fremont Main Library, 39770 Paseo Padre Pkwy. Call: Dean Fern, (415) 537-3439.

Tri Valley Apple II Users Group. Meetings: 1st Thurs.,, 6:30 PM. Call Esther Farnstrom at (415) 829-3672 or Dan Balsey at (415) 828-6237 for meeting location.

ATARI

ABACUS (Atari Bay Area Computer Users Society). Meetings: 1st Saturdays, 19th Ave. Diner, 19th & Lincoln Aves., SF. Open to all Atari XL/XE and ST users. $20/yr. Call: (415) 753-8483.

Bay Area Atari Users Group (BAAUG). Meetings: General meeting and ST users meeting 1st Mon.,, 7:00 pm, ,Bracher School, corner of Bowers and Chromite, Santa Clara. On 2nd Tuesdays. 8-bit users meet at H-P, Wolf and Pruneridge, Cupertino. BBS: (408) 247-1257.

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San Leandro Computer Club. Meetings: 1st Tuesdays, 8 pm,, San Leandro Community Library. Keith Sammons, (415)887-2008.

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AT&T Computer UNIX User Group. Meetings: 4th Wednesdays, 7 pm, AT&T Building, 1090 East Duane, Sunnyvale. Call: Thad Floryan, (408)985-7108.

AT&T Computer Users Group - South Bay. Meetings: third Wed., 7:00 pm, AT&T Bldg., 1090 E. Duane, Sunnyvale, CA. Call: Joe Lipsig (408) 733-6522. BBS: (408) 462-6329.

North Bay AT&T Computer Users Group. Meetings: 1st Wed., 6:30 pm, AT&T building. Call: Joe Mahoney (415) 586-8376. BBS: (415) 829-6027.

Tri-Valley AT&T Computer Users' Group. Meetings: Third Thursdays, 6:30 pm,, 5794 West Las Positas Blvd., Pleasanton. Call: Ed Novi, (415)224-2996, Joe Mahoney, (415)540-2219.

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Sonoma County AutoCAD Users Group. Call (415)777-9144 for info.

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ACCESS (The Amiga And Commodore Computer Enthusiasts Society). Meetings: 3rd Tues., 7:30 pm, Community Room of Homestead Savings & Loan, 999 E. Stanley Blvd., Livermore, CA. Contact Ron Kremkow at (415) 449-1784.

Campbell Chapter of 64/More Commodore UG. Meetings: 4th Tues., BBS (408) 946-6154.

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Commodore Users Group Santa Cruz. Meetings: 3rd Wednesdays, 2395 Delaware Ave., Santa Cruz. Call: Ruth Wieland, (408) 688-2843.

Cupertino Chapter of 64/More Commodore UG. Meetings: 3rd. Sat., BBS (408) 946-6154.

CWEST Bay Area Commodore User Group. Meetings: 3rd Thurs., Fort Mason, Bldg. C, Rm. 215. Supports C-64/128, Amiga. Write P.O. Box 146731, San Francisco, CA 94114-6731.

Diablo Valley CUG. Meetings: 3rd Thurs., 7:30 1331 Concord Ave, Concord., PO 27155, Concord, CA 94527., For info write: Box 27155, Concord, CA 94527. Or call (415) 932-2413.

F.U.N.H.U.G. - Fremont, Union City, Newark, Hayward User Group. Meetings: 3rd Thurs., 7:30 pm, Newark Public Library, 6300 Civic Terrace Ave., Newark, CA. A user-organized, user-operated user group not affiliated with any computer or software manufacturer or distributor.

Fairfield Commodore User Group. Meetings: 1st & 3rd Mon., Solano County Education Bldg. Write to P.O. Box 2778, Fairfield, CA 94533-9998 for info.

Marin Commodore Users Group. Meetings: 2nd Wednesdays, Redwood High. Call: 883-7748; BBS 883-2558—300/1200.

Mother Lode Commodore Users Group. Meetings: 2nd & 3rd Thursdays, 7:00 pm,, Calaveras County Water District Board Room. Supports the Commodore PET, VIC, 64, Plus/4 C-16 & 128. Call: Larry Anderson, 754-5530.

Napa Valley Commodore Computer Club. Meetings: Third Mondays, Rapoport's, 2225 Brown St., Napa. Write to: PO 2324, Napa, CA 94558.

North Valley Chapter of 64/More Commodore UG. Meetings: 2nd. Sat., BBS (408) 946-6154.

PLUG (The Plus/4 Users Group). No regular meetings. Over 800 members internationally. Write to P.O. Box 1001, Monterey, CA 93942 for info.

San Jose Chapter of 64/More Commodore UG. Meetings: 1st. Sun., BBS (408) 946-6154.

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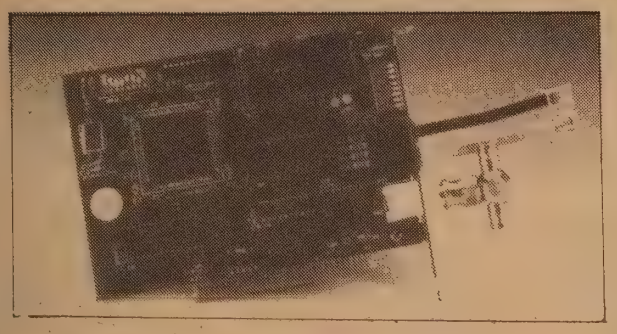

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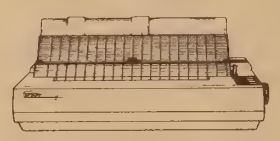

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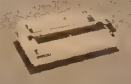

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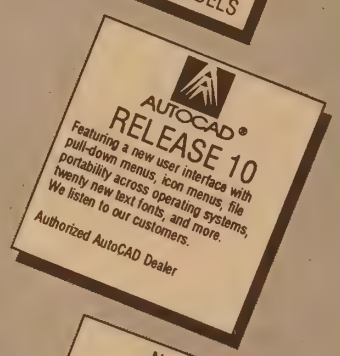
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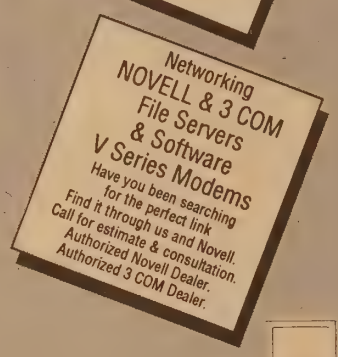

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dBASE Users Group of Marin & Northbay. Meetings: monthly, call (415) 488-0342 for info. Open membership, beginners through developers.

dbDVLPRS. Meetings: 2240 Buchanan, Ste. 5, San Francisco. Includes dBASE II, III, VI, Clipper, Foxbase, dBXL, Quicksilver and others. Call: Bruce Leandro, (415) 923-0659.

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Desktop Publishing SIG/GMUG. Meetings: 1st Tuesdays, 7 pm,, San Francisco Business Times Building, 325 Fifth St., San Francisco. Call: 641-GMUG

Desktop Publishing SIG/SFPCUG. Meetings: 4th Tuesdays, 7:30 pm,, 179 Parnassus Ave., SF. Call: Phil Smith, (415) 566-3648.

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PC Publishers Of Northern California. Meetings: 2nd Thursdays, 7 pm,, 1415 Valencia St., San Francisco Newsletter, telephone hotline, reference library, education. Support Ventura, PC PageMaker, etc. Intro membership: $24/yr. Information: Al, (415) 661-9270 or Donna, (415) 826-6640.

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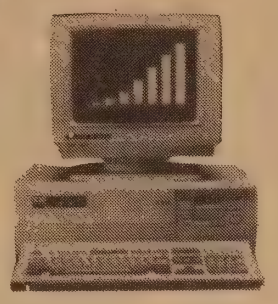

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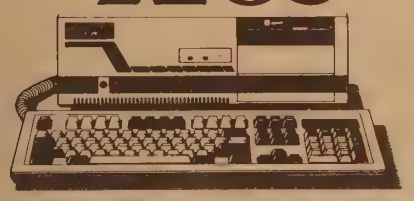
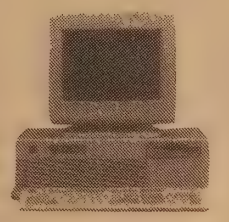


386-20 SYSTEM



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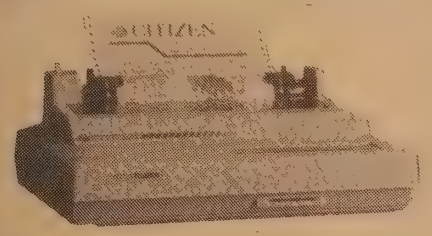

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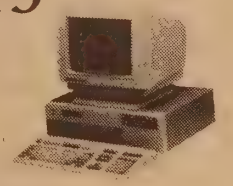

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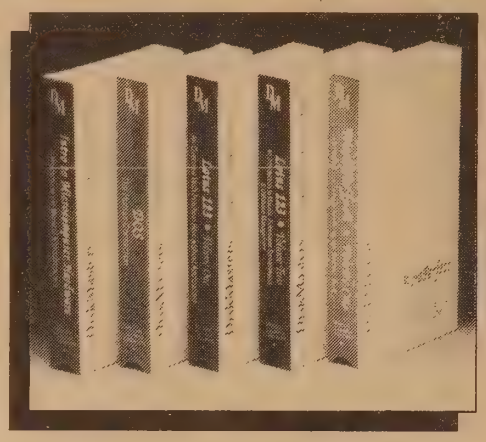

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East Bay Fog. Meetings: Monthly meetings, Apostleship of the Sea, 600 Terminal St., Oakland. Newsletter, BBS. Call (415) 272-9099 for more info.

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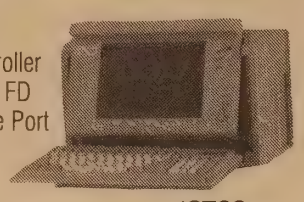

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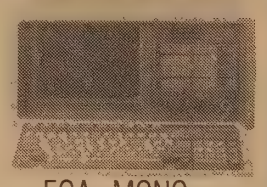

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Solomon User Group Of Silicon Valley. Meetings: Wednesday, August 10, 6:30 pm,, Conveyor And Storage Dynamics, 2581 Leghorn St., Mt. View. Call Grihalva Associates, 39899 Balentine Dr., Suite 175, Newark, CA 94560; (415) 659-1515.

South Bay AT&T PC UG. Meetings: Call for info. Call (408) 226-0116.

South Bay WordPerfect User Group. Meetings: Monthly, 13650 Saratoga Ave., Saratoga. Call: Martin Van Derpool, (408) 238-8434.

South County PC Users Group. Meetings: Round Table Pizza Restaurant, 22457 Foothill Blvd., Hayward. Call: R.A.McCloud, (415) 537-9899.

Teachers SIG/SFPCUG. Meetings: 3rd Mondays, 7:30 pm,, Chancellor's Conf. Rm., UCSF, 3333 California St., SF. Call: Margaret Gwathmey, (415) 982-4221.

TRS Nybblers. Meetings: 2nd Friday, 8 pm,, Chabot College, 2555 Hesperian Blvd., Rm. 600, Hayward. MS/DOS, CP/M, laptops, CoCo's, Mod 1, 3, 4; Mod 2, 12, 16, 6000. PD software education modules, problem solving committee.

Valley Computer Club IBM PC Users Group. Meetings: 3rd Wed., 6 pm, Xerox Bldg. 475 Oakmead Pky, Sunnyvale, CA. $24/yr member. Monthly VPUG News, access rights to VPUG-SIG Advice on desktop pub. techniques, new products, bugs, etc.

WordPerfect SIG/SFPCUG. Meetings: 3rd Mondays, 7 pm,, Chancellor's Conf. Rm., UCSF, 3333 California St., SF. Call: Debbie Foster, (415) 285-4534.

INMAGIC

San Francisco INMAGIC User Group. INMAGIC Meetings: Monthly. Call for dates and times. Call: Dana C. Ellingen, 423-4582.

KAYPRO

BAKUP. Meetings: 3rd Tuesdays, 7:30 pm,, Albany Senior Center, 846 Masonic Ave., Albany. Call: Bob Athey, (415) 526-3541.

Kay+Fun Peninsula Computer Club. Meetings: 7:30 pm,, Social Room, 222 Laurel St., San Carlos. CP/M + DOS library. BBS: (415) 572-8219. Call: 593-9981.

San Francisco Computer Society. Meetings: 1st Monday, 7:00 pm,, Homestead S&L, 5757 Geary Blvd., San Francisco CP\M and DOS machines. No BBS. Call Ralph Gallagher, (415) 929-0252 for information.

LAPTOPS

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MACINTOSH

A32, The Association Of Apple 32 Users. Meetings: 2nd Saturdays, GTE cafeteria, Mountain View. Membership includes monthly meetings, access to Disk of the Month, full BBS priviledges, the ICON newsletter, SIGs, discounts, and much more. Call: 263-0398.

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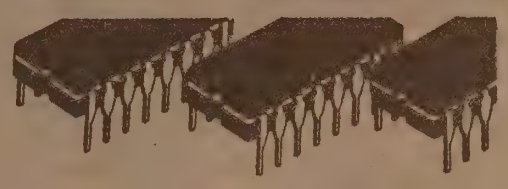

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Bay Area MacForum. Meetings: 3rd Saturdays, noon, Daly City Library, 40 Wembeley. BBS, SIGS, PD/SW library, Help List, Newsletter, Newcomers Meeting, more. Call: (415) 771-5830/ 398-2335.

Berkeley Macintosh User Group (BMUG). Meetings: every Thurs., 6 pm, Physical Sciences Lecture Hall, UC Berkeley Campus. SIG meetings on Mondays, Tuesdays & Wednesdays. Call for this week's topic. (415) 849-9114. BMUG, 1442A Walnut St., #62, Berkeley, CA 94709.

Christian Macintosh User Group, San Francisco Chapter. Meetings: 2nd Thurs., San Francisco. Newsletter and support available. Contact Rick Thrasher at (408) 437-1913. Bible Study and DTP SIGS.

Christian Macintosh User Group, Silicon Valley Chapter. Meetings: 1st Thurs., San Jose. Newsletter and support available. Contact Rick Thrasher at (408) 437-1913.

Desktop Publishing SIG/ GMUG. Meetings: 1st Tuesdays, 7 pm,, San Francisco Business Times Building, 325 Fifth St., San Francisco. Call: 641-GMUG.

Diablo Valley Apple Users. Meetings: 1st & 3rd Fri., 7 pm, Willow Creek Ctr.,-1026 Mohr Lane, Concord, CA. SIG's meet monthly. Featuring library of pub. domain software & club's DOM's. Newsletter, demos, group buys hard/software.

EBMUG (East Bay Macintosh Users Group). Meetings: 3rd Tuesdays, 7:30 pm,, 724 Allston Way (@4th) near University Ave., Berkeley. Members receive free PD software. Bring blank disk. Meetings open to everyone. Call: Terry Pennington, (415) 486-0147.

GMUG (San Francisco's Macintosh User Group for Gays and Lesbians). Meetings: 3rd Wednesdays, 7:30 pm,. Call: 641-GMUG.

HyperCard SIG/GMUG. Meetings: 7 pm,, 78 A Mars St., San Francisco. Call: 641-GMUG.

Mac Diablo Users Group (MDUG). Meetings: 3rd Tues.,, Community Room, Glendale Federal Savings, 3101 Crow Canyon Road, San Ramon.

MacCruisers — Santa Cruz. Meetings: 2nd Wed., Jade Street Community Ctr. at 45th Ave., Capitola, CA.

Macintosh SIG/SEF. Meetings: 7 pm,, 2nd Tuesdays, Apple Cafeteria. Call for dates and time. Tony Meadow, (415)644-9400.

Macintosh Users Of ComputerWare (MUCoW). Meetings: 2nd & 4th Wednesdays, 7:00 pm,, Above ComputerWare store, 490 California Ave., Palo Alto. Call: (415) 496-1051 or 496-1033.

MacNexus — Sacramento's Macintosh Users Group. Annual dues, $30, includes monthly newsletter. Contact: MacNexus, PO 163058, Sacramento, CA 95816; (916)448-6481.

Macs Of Marin (MOM). Meetings: 2nd Thursdays, 7 pm,, Redwood High School, 395 Doherty, Larkspur. Call: Steve Salzman, 459-5707.

Silicon Valley Computer Society's Macintosh SIG. First meeting: September 21, 7:30 pm,, 6th floor offices of Arthur Young and Co., Mitsubishi/Plaza Bank Building, 55 Almaden Blvd., San Jose. A forum for shared ideas. First meeting will be a demonstration of HyperCard. Other demos are planned for future meetings. Call: Dennis Dawson, (408) 947-5550.

Stanford Macintosh Users' Group (SMUG). Stanford community membership: $25; public membership: $35 per year. Call: 723-SMUG. BBS: (415) 723-7685.

TI-West Meetings: 2nd Fri., 8 pm, Chabot College, Rm. 600, 25555 Hesperian Blvd., Hayward, CA. Access to a variety of pub. domain software, education modules "problem solving" peripheral committee.

Tri-Valley Macintosh User's Group (TMUG). Meetings: 1st Thursdays, 7 pm,, 4695 Chabot Dr., Rm 114, Hacienda Business Park, Pleasanton. Newsletter, large P/D library. Call: James

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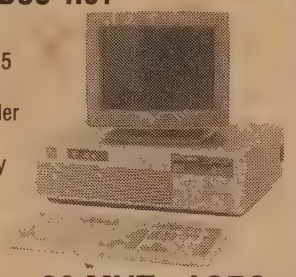

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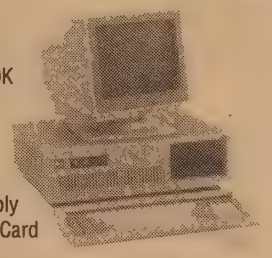

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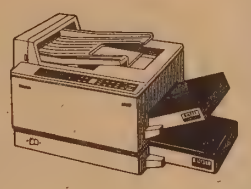

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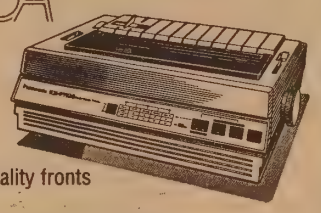

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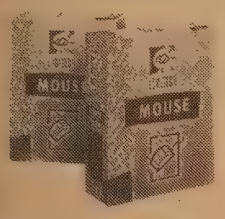

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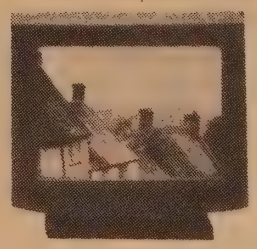

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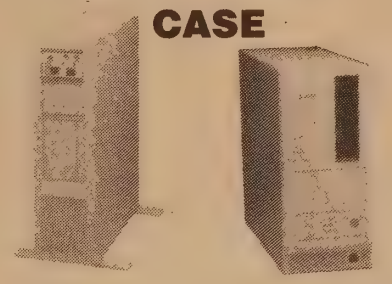

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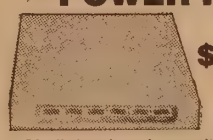

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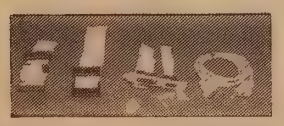

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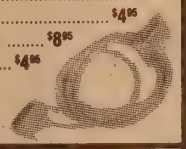

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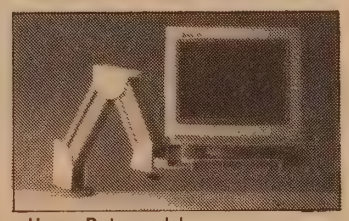

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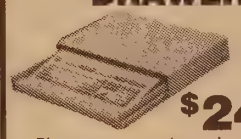

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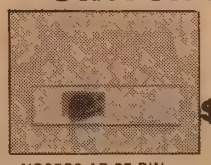

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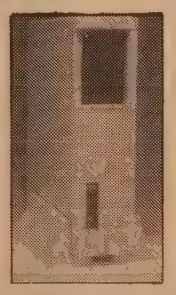

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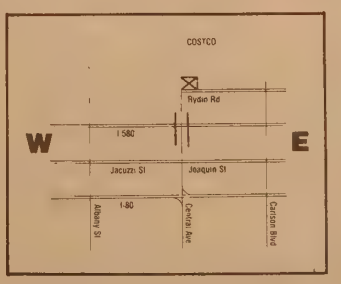

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MICROSOFT

Mac Diablo Users Group (MDUG). Meetings: 3rd Tuesday, 7:30 pm,, Community Room, Glendale Federal Savings, 3101 E. Crow Canyon Rd., San Ramon. Small, helpful group.

Microsoft Word Users Group. Meetings: 4th Mondays, 7:30 pm, - 9:30 pm,, Hewlett Packard-Cupertino-Oak Room Bldg., 48 Pruneridge, 100 yds. east of Wolfe off Hwy 280. August 22: Chris Donner, Pres. Access Softek on DRAGNET for Text Retrieval and Management. Call: Bill West, 356-8805.

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San Francisco Mindset Users Group. Call: (408)270-0251.

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BAMDUA (Bay Area Micro Decision Users Assoc.). Meetings: 3rd Tues., 7:30 pm, Albany Senior Center,846 Masonic Street (just north of Solano) in Albany, CA. Voice:(415) 534-4257. BBS:(415) 654-3882. P.O. Box 5152 Berkeley CA 94705.

San Francisco Computer Society. Meetings: 1st Mon., 7:00 PM. Homestead S&L, 5757 Geary Blvd., San Francisco. MS-DOS machines, Osborne, Kaypro, Morrow. Call Ralph Gallagher 929-0252.

NEC

Bay Area NEC/100 Users Group. Meetings: 2nd and 4th Wednesdays. Locations vary. For those interested in laptops, especially Kyocera 80C85 type (NEC 8201a, Radio Shack Model 100 or 102. Call (415) 658-1889.

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Novell Users Group. Meetings: Third Wednesdays, 6:30 pm,, Coco's restaurant, 1305 South Mary, Sunnyvale. Newsletter, bulletin board, product demos, assistance for beginners. Call: Bill Strouse, (408) 453-3321 days; modem, 24 hrs: (408) 453-3326.

ORACLE

Northern California Oracle UG. Meetings: Call (408) 738- 8330 for info. Meets every 3 months at different Bay Area locations. Newsletter published between meetings.

OSBORNE

San Francisco Computer Society. Meetings: 1st Monday, 7:00 pm,, Homestead S&L, 5757 Geary Blvd., San Francisco. CP\M and DOS machines. No BBS. Call Ralph Gallagher, (415) 929-0252 for information.

PARADOX

Silicon Valley Paradox Users Group. Meetings: 3rd Tuesdays, except December. For information, Call: Emily Alford, (408)285-0348, or LaTulipe at (408)646-0297.

PROGRAMMING LANGUAGES

APL Bay Area Users' Group. Meetings: 2nd Monday, 6:30 pm,, I.P. Associates, 425 Sherman Ave., Suite 200, Palo Alto.

C Language SIG/SFPCUG. Meetings: 2nd.Mondays, 6:30 pm,, Kam's Resturant 2068 Center St., Berkeley. Call: Debee Norling, (415)644-1855.

CC County Programmers Group. For info write: 3115 Elizabeth Lane, Antioch, CA 94509.

COBOL And SQL Users Club Call: Dr. Badshah K. Mian, (415) 337-1787.

Forth Interest Group of Silicon Valley. Meetings: 4th Sat., 1 pm, Oak Room, at Hewlett Packard, on Pruneridge in Cupertino. Call George Shaw at (415) 276-5953 for info.

Forth Interest Group, North Bay Chapter. Meetings: 2nd Sat., 1 to 5 pm, South Berkeley Community Library, corner of Russell and Martin Luther King Junior Way. One block north of Ashby BART station. Contact George Shaw (415) 276-5953.

Modula-2 SIG/SFPCUG. Meetings: 3rd Thursdays, 7:30 pm,, Call: Richard Lesnick, (415) 398-3587.

Prolog Forum. Meetings: Monthly, 2nd Thursday 7:00 pm,, Belmont and various locations. Prolog Forum is a group dedicated to supporting users of the Prolog computer language in artificial intelligence. Call Mark A. Epperson at (415) 594-9981.

SEF OOP SIG. Meeting: Third Tues., 7 pm,, Parc Place Systems, 2400 Geng Rd., Palo Alto. Call: Dean Ritz, (415)691-6727 or (415)854-7219..

R:BASE

East Bay User Group. Meetings: Last Thursday of each month. For location and time, Call: Scott, 451-5316.endro Computer Club..

R:BASE User Group Of The Redwoods. Meetings: Third Wednesdays, 3 pm,, Sonoma/Marin County rotating meeting places. Call: Jim Ray, (707)886-5315.

Northern California User Group. Meetings: Every 3 months. For schedule, Call: Ken Lebeiko, 881-2652.

Peninsula User Group. Meetings: First Wednesdays. For location and time, Call: Don Whitecar, 592-5033.

TANDY/RADIO SHACK

BYTE Bandits of America. Meetings: Campbell. Call (408) 379-2774 for info.

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Tandy 1000 (The Mug). Mail-based user group w/ monthly newsletter. Not for PC jrs. Members communicate through newsletter. $8/yr. fee; checks to: Daniel Tuma, 30 Arjang Ct., Alamo, CA 94507-2041.

TRS Nybblers. Meetings: 2nd Fri., 8 pm, Chabot College, 25555 Hesperian Blvd., Hayward. MS-DOS, CP/M, laptops, Mod 1, 3, 4, Mod 2, 12, 16, 6000. Bud Gallagher (415) 522-5960 or Bruce Jarvis (415) 846-3575.

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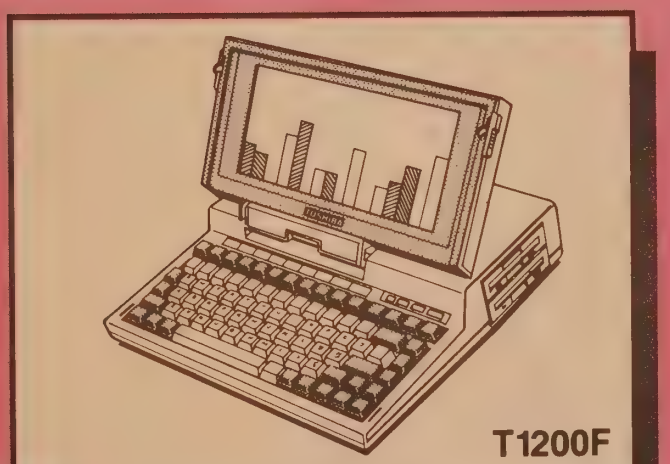

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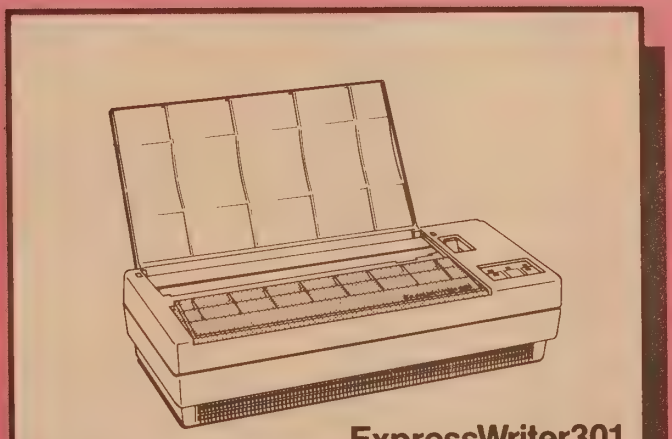

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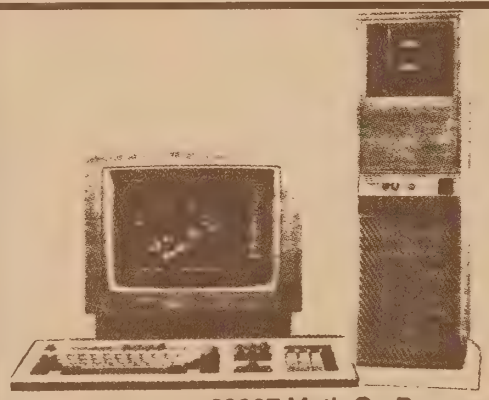

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Solomon User Group of Silicon Valley. Meetings: For info contact Grihalva Associates, 39899 Balentine Dr., Suite 175, Newark CA 94560.

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Sun User Group. Call: (415)336-4343.

S—100

S—100 Business Users Group. Meetings: 4th Tues., 7:30 pm, Santa Clara Univ., Rm. 101, Bannan Engineering Bldg. CP/M & MS-DOS libraries. BBS: (408) 262-5150, 8-N-1,2400/1200/300.

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Brea 99'ers Users Group. Meetings: 1st Mon., 7:30 pm, Mercury Savings, La Habra, CA.

San Francisco 99ers. Meetings: 3rd Saturdays, 3751 Elston Ave. Call: Fred, (415) 530-8335.

Thousand Oaks Personal Computer Club (TOPCC). Meetings: monthly. Call: (714) 686-0336.

TIMEX/SINCLAIR

Timex Sinclair East Bay Z80 Users Group (TSEBZUG). Russ English, (415) 465-3116.

Timex Sinclair Peninsula Users Group (TSPUG). Contact George Mockridge, (408) 878-1773.

Timex/Sinclair Users of Silicon Valley (GUTS/SV). Meetings: each Sat., 9 am, Stanford Univ., Jordan Hall (quadrangle), Math Bldg. RM 380C. SW library & newsletter. For topic check PDSE BBS in Sunnyvale (408) 735-7390, 300/1200, 8-N-1, 24 hrs.

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SVNet. UNIX User Group. UNIX Meetings: 3rd Tuesdays, 10500 DeAnza, Cupertino. Talks on UNIX topics, books, and reviews. Call: Ralph Barker, (408) 248-8649.

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San Mateo Ventura Users' Group. Meetings: 2nd Mondays, 7:00-9:30 pm,, 619 Bradford, Redwood City. Workshops, lectures, demonstrations of new techniques, shortcuts. Call: Eleanor Church, (415) 726-3181.

Ventura Desktop Publishing Users Group. Meeting: 1st Tuesday, 7-9:00 pm,, 1650 S. Amphlett Blvd., San Mateo. Newly formed group. Call Eleanor Church at (415) 726-3181, or Pam Sheble at (415) 574-2003 for information.

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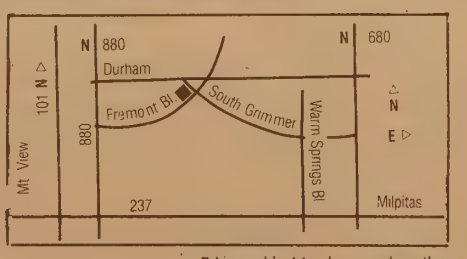

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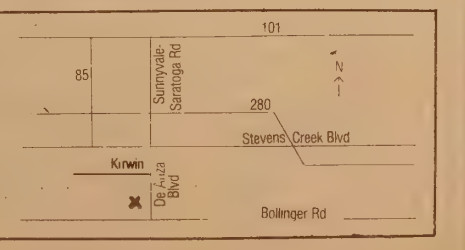

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CPU	80286-8	80286-8 / 10/12	80286-12	80286-16	80286-12	80386SX-16	80386SX-16	80386-20/25	80386-25	80386-33
Math Co-po	80287-2/3	80287	80287	80287	80287	80387SX	80387SX	80287/80387	80387	80387-33
Cache Ram	N	N	N	N	N	N	N	N	64K/256K	64K/256
Dram Type	64/256K	64/256K	64/256/1024K	64/256/1024K	256k/1M SIMMS	256k/1M SIM	256/1M SIM	256/1M SIP	256/1M SIM	256/1M SIM
Mem Speed	150ns	120 / 100ns	120/100 ns	80 ns	100ns	100ns	100 ns	100/80 ns	100/80 ns	80 ns
Mem Config	512/640K/1M	512/640K/1M	512/640K/1/2/4M	512/640K/1/2/4M	512K/1M to 6M	512/640k/1/2/4MB	512K to 8MB	1/2/4/8/16MB	1/2/4/8/16MB	1/2/4/8/16MB
8 Bit Slots	8	8	2	2	(2) 5	2	2	1	2	1
16 Bit Slots	0	0	6	6	(3) 3	6	6	4 + 2 Ser/ 1 Par	5	5
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BIOS	Quadtel	Quadtel	Award /AMI	Award /AMI	Phoenix	Award	Phoenix	AMI	AMI	Phoenix/AMI
Relative Speed	9	12.4 / 15.6	15.6	21.6	15.4	20.1	18.0/21.4	32.6(2 banks)	40.2/43.8	58.7
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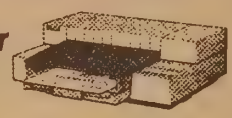

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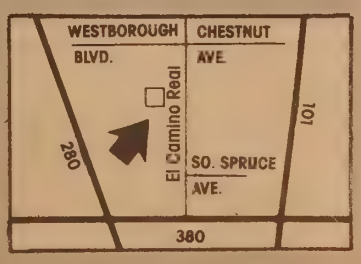

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R E V I E W S

continued from page 76

any kind whatsoever. Before adopting or implementing any personnel policies, all employers should have them reviewed by experienced legal counsel."

Using The Program

The program is very easy to run. Just run the install program and answer the questions. Then run the program, look at the list of topics, pick a topic you want to consider, read the policies on screen, and consider alternatives and other discussions about the policies. When you are done, you can select that policy to be added to your handbook. The file can be printed to disk; you can then add the selected information to a word-processor document so that you can print it with your chosen formatting and other changes. (*Personnel Policy Expert* will keep the files and print them for you, but I found that I would rather keep the handbook as, for example, a *WordStar* file and then use the *WordStar* formatting commands to make the handbook look nice when printed with my H-P LaserJet II.)

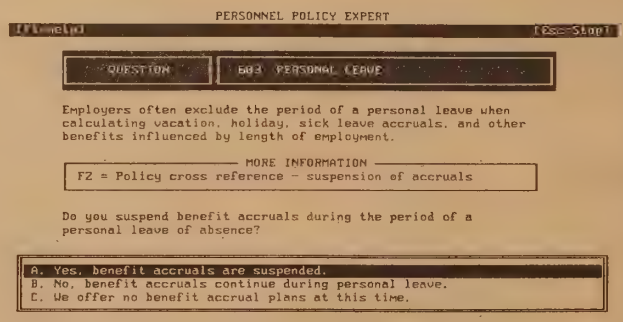
Personnel Policy Expert also lets you keep a table of contents for the policy book you are creating. You can also have pending policies—those which you are considering, but which you have not yet added to the book. The latest version of *Personnel Policy Expert* will let you print a single policy, all of your policies, or a select group of policies, as you need them.

When you are examining a policy for potential inclusion in your handbook, a series of prompts will guide you through deeper and more insightful discussions about its effects and implications.

You can keep the policy handbook online in your computer. Rather than printing out the handbook, you can let every employee peruse it on screen. To accomplish this, you can also password protect functions of the program so that only those policies in your manual are available on screen. Also, if you have policies that were not already internal to *Personnel Policy Expert*, you could add those to your on-screen versions.

When considering whether you want this type of program, you should consider that written and published policies are valuable in working with your employees. They leave little doubt about those things that your organization considers important. Communication with your employees is important, and may save you lots of grief if you do take actions about a "policy" item and the courts find that you never did write down those policies.

Lastly, an expert system like *Personnel Policy Expert* would not be much good unless it were updated regularly. *Personnel Policy Expert* is updated from time to time as new policies are added; existing policies have new discussions added or are change as the case law changes about the individual subject areas.


PERSONNEL POLICY EXPERT
[F1=Help]
[Esc=Stop]
QUESTION
803 PERSONAL LEAVE
Employers often exclude the period of a personal leave when calculating vacation, holiday, sick leave accruals, and other benefits influenced by length of employment.
MORE INFORMATION
F2 = Policy cross reference - suspension of accruals
Do you suspend benefit accruals during the period of a personal leave of absence?
A. Yes, benefit accruals are suspended.
B. No, benefit accruals continue during personal leave.
C. We offer no benefit accrual plans at this time.

PPE does a thorough job of exploring those obscure issues you might not have considered.

Over 50 policy areas are currently covered in *Personnel Policy Expert*, including Access to Personnel Files, Performance Evaluations, and a form indicating that the employee has received and read the handbook.

All in all, this is a program which might solve many of the problems the managers of small- and medium-size businesses have in understanding and developing a consistent and sound set of human resource policies for their company. (Knowledge Point, 1311 Clegg Street, Petaluma CA 94952, 707/762 - 0333.) ■

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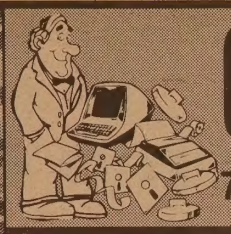

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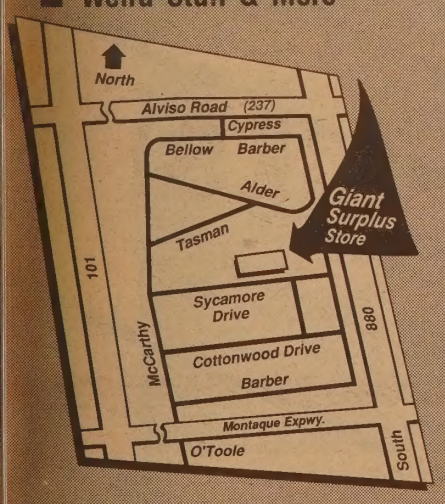

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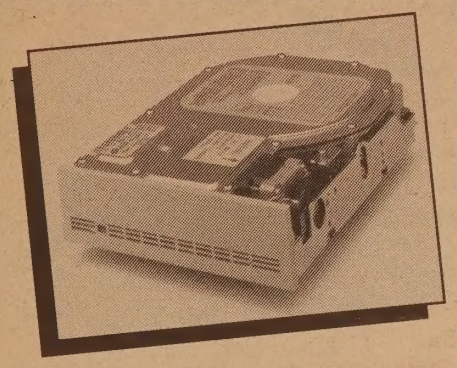

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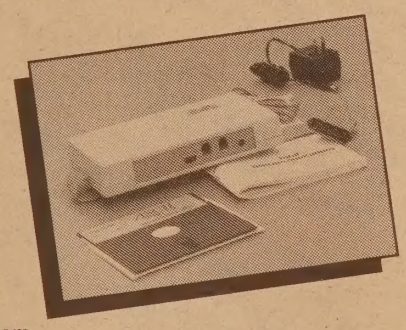

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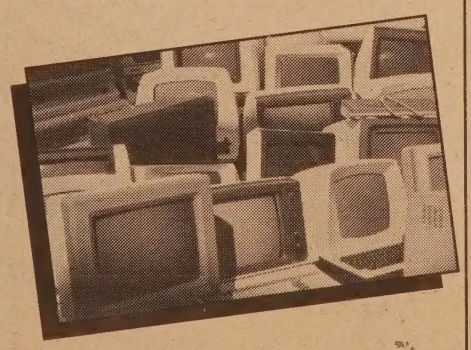

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134	OMTI 6510 XT, ESDI	$89
135	Manuals	$8 each
136	Cables Available — Ask for Pricing	

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The Famous Mouse Ball Memo Revealed

I've always been a student of Folklore since my days at UC Berkeley, where I was introduced to the the discipline by Professor Alan Dundes. Dundes is a big fan of what he calls Urban Folklore. These are those cartoons and phony memos that get photocopied in offices around the country and passed around from hand to hand. If you've ever worked in an office, you've seen a ton of them. Usually they are posted on someone's bulletin board for all to see.

There hasn't been much in the way of computer-related jokes or folklore except those commercial cartoons developed by a few specialists. I had heard of a famous "Mouse Ball" memo that had been floating around some offices and was pleased to see it appear in the PCMagnet forum on CompuServe. Soon I received a real copy of one of the xeroxed versions, and finally a third copy. Each one of the people discovering this memo has claimed it to be a genuine memo.

Yeah, right. If you find any similar memos, pass them along to me.

NEWS REPORT 29
25 May 1989
IBM ANNOUNCES EXTENDED MOUSE SUPPORT

ESD PRODUCT SERVICE SUPPORT
SUBJECT: NEW RETAIN TIP

Record number: H013944
Device: D/T8550
Model: M
Hit Count: UHC00000
Success count: USC0000
Publication code: PC50
Tip key: 025
Date created: 089/02/14
Date last altered: 089/02/15
Owning B.U.: USA

Abstract: MOUSE BALLS NOW AVAILABLE AS FRU
Mouse balls are now available as a Field Replacement Unit (FRU). If a mouse fails to operate, or should perform erratically, it may be in need of a ball replacement. Because of the delicate nature of this procedure, replacement of mouse balls should be attempted by trained personnel only.

Before ordering, determine type of mouse balls required by examining the underside of each mouse. Domestic balls will be larger and harder than foreign balls. Ball removal procedures differ, depending upon manufacturer of the mouse. Foreign balls can be replaced using the pop-off method, and domestic balls using the twist-off method. Mouse balls are not usually static sensitive, however excess handling can result in sudden discharge. Upon completion of ball replacement, the mouse may be used immediately.

It is recommended that each servicer have a pair of balls for maintaining optimum customer satisfaction and that any customer missing his balls should suspect local personnel of removing these necessary functional items.

P/N N33F8462—Domestic Mouse Balls P/N N33F8461—Foreign Mouse Balls

SAS Keywords: PSY2 8525SYSMISC 8530SYSMISC 8550SYSMISC 8560SYSMISC 8570SYSMISC 8580SYSMISC

ESD PRODUCT SERVICE SUPPORT, BOCA RATON, FL.

Each one of the people discovering this memo has claimed it to be a genuine memo.

John C. Dvorak graduated from the University of California. He is a contributing editor of PC Magazine and MacUser, considered by many to epitomize the contrarian view of things—a charge that he vehemently denies. Dvorak's motto is: If you have nothing nice to say, then don't say anything at all.

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IN LOTS OF 100

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